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THE

# TESTIMONY OF MODERN SCIENCE

TO THE

# UNITY OF MANKIND;

BEING A SUMMARY OF THE CONCLUSIONS ANNOUNCED BY THE HIGHEST AUTHORITIES IN THE SEVERAL DEPARTMENTS OF PHYSIOLOGY, ZOÖLOGY, AND COMPARATIVE PHILOLOGY IN FAVOR OF THE

## SPECIFIC UNITY AND COMMON ORIGIN OF ALL THE VARIETIES OF MAN.

BY

J. L. CABELL, M. D.

PROFESSOR OF COMPARATIVE ANATOMY AND PHYSIOLOGY, IN THE UNIVERSITY OF VIRGINIA.

WITH AN INTRODUCTORY NOTICE
BY JAMES W. ALEXANDER, D.D.

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# NOTICE

## TO THE SECOND EDITION.

THE enterprising Publishers having determined to print a second edition of this Essay, I avail myself of the occasion, in conformity with the suggestions of a friendly critic, to prepare for it an Analytical "Table of Contents" and an "Index of Authors." In connection with the former part of this task, I have considered it expedient to indicate the leading branches of the argument by divisions into Chapters under each of the two larger divisions adopted in the first edition. This plan has rendered necessary a slight change in the arrangement of some of the subordinate topics noticed in Part II., the order heretofore adopted having been determined by circumstances that had no reference to such a classification.

J. L. C.

UNIVERSITY OF VIRGINIA, February, 1859.

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### THE SPECIFIC UNITY OF ALL THE RACES OF MEN.

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# INTRODUCTORY NOTICE.

ANY embarrassment which might at first arise from my appearing before the public in this unexpected character is removed by the consideration that these prefatory remarks are neither a discussion of the scientific topic, to which I certainly have no vocation, nor an encomium on the work itself, which it as surely does not need. My humbler object is to call attention to the important matter in hand, and to recommend this line of inquiry to the friends of religion, to theological students, and to my younger brethren in the sacred office.

It has been remarked by Lord Bacon, that as the boundaries and physical peculiarities of any geographical canton are best described by one who looks upon them from the top of some neighboring mountain, so no one can adequately discern the limits and contents of his own science or profession, who does not take a bird's-eye view of it from the eminences of some other

field of knowledge. The sciences may be kept in too much insulation. Physical philosophers may abstract themselves from the entire domain of moral and religious truth; while, in return, theologians, with a mingled fear and pride, may turn away with disgust from discoveries attained in the realm of nature. It cannot be too often said, that both are volumes from the hand of the same Author.

In regard to ministers of the gospel, it is undoubtedly true, that their training and the nature of their pursuits keep them remarkably distant from the natural sciences; into which if they sometimes divert, it is from a strong individual bias, or for purposes of entertainment. This is said with a full recollection of those eminent clerical savans who have illustrated the paths of scientific deduction and discovery, but who, in the same proportion, and for good reason, have withdrawn themselves from theological research, and from the work of the pulpit. The consequences of this entire separation of territories have been unfortunate. Mutual ignorance and misapprehension have sprung up. Room has been given for professional rivalry, and for that vaunting of one science over another, which is stigmatized by Aristotle. Whereas, all the while, a more generous familiarity with the condition of each other would be strengthening to both. The metaphysical, linguistical and hermeneuti-

cal studies of clergymen, will always be demanded by their profession; but it is high time that they were more generally disciplined in those sciences which daily more and more afford corroboration to the Sacred Oracles.

At a hasty glance, nothing seems more remote from the concerns of religion, than the structure of our globe, the succession of its animated tribes, past and present, and the families and dispersions of mankind. And in this superficial misapprehension, there are some who live and die; yet nothing more is needed to dissipate such a prepossession, than a careful study of the Scriptures themselves. The books of Moses open with creation and cosmogony. The Deluge and its results occupy a large space in these earliest annals. The ethnographic details of the tenth chapter of Genesis show us how the "nations were divided in the earth, after the flood." And it has often struck me as the very grandest sanction which could be given to such studies, that when, in patriarchal days, Jehovah interposes to adjudicate between Job and his friends, and utters his voice from the whirlwind, he draws his arguments and illustrations from NATURAL HISTORY. For, after adducing the earth and ocean, Arcturus, Orion and the Pleiades, he presents to view the wild goats, hinds and rhinoceros, the peacock, stork and ostrich, the hawk and the eagle; he largely depicts

behemoth and leviathan, and with this absolutely closes the divine discourse. This induction of particulars fills four entire chapters. Nothing could be a more unanswerable vindication of what our fathers were wont to call Physico-Theology.

Unspeakable interest has been conferred upon certain fields of scientific inquiry, by the relation which they have come to bear to Apologetics. The defences of our common Christianity have been compelled into new dispositions, by the altered methods of attack employed by adversaries. This will instantly be recognized as true of Astronomical Cosmogony, of Geology, of Ethnology, and of the doctrine of Races. The work before us concerns the last two departments of knowledge. The teachings of Scripture have been assailed from several quarters, sometimes with the fanfaronade of a knowledge not possessed, and sometimes with the misapplication of genuine, extraordinary science. The faith of many was shaken, as well by the "Vestiges of Creation," which, however, found a speedy quietus, as by the array of investigators who denied the proper unity of our species. This was not a mere question of natural science. The specific unity of the races is concerned in the doctrine of salvation; in the fall of Adam and the Redemption of Christ. It was not a matter of indifference whether the nature which fell in Eden, was that which we inherit, and

whether the humanity which Jesus bore upon the cross and carried into heaven, was that of all mankind. And hence, the universal Christian body, so far as imbued with any tincture of science, was startled and grieved at the position taken up by Professor AGASSIZ. These are the stirring problems which are attempted in the work before us.

The Author approaches the subject entirely from the scientific side. For this his daily investigations and instructions in Comparative Anatomy will be seen to have given him peculiar fitness. No treatment of these perplexing questions by preachers or theological professors could so disarm suspicion, as the calm and independent research of a scientific inquirer, who avowedly pursues his investigation without previously determining to accept the Biblical statements. It will give every ingenuous reader satisfaction to observe the fairness, courtesy and deference with which M. AGASSIZ is treated, even when his hypothesis is shown to be untenable, on grounds purely natural. And not a few will rejoice to find conclusions so favorable to Christianity proceeding from one of the oldest chairs of the University of Virginia,—the chief academical institution of the South,—at which yearly five or six hundred young men receive their impressions for life. But above all, the believer in Revelation will hail this as a new testimony that each discovery of science,

though at first shunned as a foe, will at length be embraced as an auxiliary; until we all come to concur with the great dictum of Richard Bentley: DEPEND ON IT; NO TRUTH, NO MATTER OF FACT, FAIRLY LAID OPEN, CAN EVER SUBVERT TRUE RELIGION.

JAMES W. ALEXANDER.

NEW YORK, October 22, 1858.

# AUTHOR'S PREFACE

## TO THE FIRST EDITION.

THE following essay is a republication, with a few unimportant changes, of a Review of Nott and Gliddon's "Types of Mankind," which originally appeared in the "Protestant Episcopal Review and Church Register." The examination of that work in its claims to popular acceptance, in so far as it aims to overthrow the doctrine of human unity, was undertaken at the request of an honored prelate, who believed that a large class of readers, and especially of those in the season of youth, were deceived by its bold assumptions and confident assertions in respect to the significance of modern scientific discoveries on the subject of the distinctions between the varieties of the human race. Being fully satisfied that the peculiar views, for the promulgation of which that work was written, were in no degree supported by the real teachings of science, the present writer readily consented to prepare a summary statement of the conclusions warranted by the latest discoveries in relation to the topics in controversy. Such a course pre-

cluded any pretensions to set forth results of original research on his own part; his single aim being to indicate the line of argument adopted by the highest authorities in questions pertaining to the philosophy of Natural History, and to set forth the principal facts on which that argument is based. In the execution of this task he has made it a point, in order to avoid the possibility of misrepresenting his authorities, to quote their own words, as far at least as was consistent with brevity and convenience

Inasmuch as the general subject embraces the consideration of two entirely distinct questions, a separate article was originally assigned to the discussion of each, and the same form is retained in the present publication. In Part I., the author has discussed the question of the specific unity or diversity of the human races; and then, in Part II., assuming their specific identity as sufficiently well established, he has considered the distinct question of their origin from one or more centres, or from one or more pairs of progenitors.

In the closing article (G) of the Appendix, will be found a critical notice of "The Indigenous Races of the Earth," the last of the publications of Nott and Gliddon. This notice also was originally published in the journal to which reference has been made, and it is considered to have a sufficiently close bearing upon

the subjects discussed in the body of the essay to justify its reproduction in this form. The other articles of the Appendix will be found to possess much value and interest as *pièces justificatives*, in their relation to the grounds assumed in the course of the argument.

J. L. C.

University of Virginia, November, 1858.

# Part I.

# SPECIFIC UNITY

OF ALL

# THE RACES OF MEN.

# THE UNITY

OF THE

# HUMAN SPECIES.

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## CHAPTER I.

### PRELIMINARY TOPICS—DEFINITION OF SPECIES AND VARIETIES.

THE peculiarities which characterize the so-called typical races of the human family, suggest topics of interesting and profitable inquiry alike for the historian, the moralist and the statesman; whilst the naturalist, looking behind the actual phenomena, and investigating the

* *Types of Mankind.* By J. C. NOTT, M. D., and GEO. R. GLIDDON. Second edition. Philadelphia. April, 1854.

*The Moral and Intellectual Diversity of Races.* From the French of COUNT A. DE GOBINEAU; with an Analytical Introduction and copious Historical Notes; by H. HOTZ, and an Appendix containing a Summary of the latest Scientific Facts bearing upon the question of Unity or Plurality of Species: by J. C. NOTT, M. D., Philadelphia. 1856

origin and causes of the observed diversities of races, finds opening before him a wide field of curious and singularly fascinating speculation. In such speculations, however, the specific unity of the races is most commonly assumed as a fundamental truth. Until recently, at least, this was the fact throughout Christendom, and had the dogma been challenged, it would have been considered a sufficient vindication of the common belief to allege that it rests upon "a profound instinct of human nature," and that it is confirmed by the express declarations of Holy Writ.

Of late, however, it has been contended that the objections usually urged against the practice of founding scientific conclusions on arguments derived from the popular interpretations of the Scriptures apply with undiminished force to the case under consideration. Without stopping to inquire into the validity of this special application of a general principle, we remark with respect to the principle itself, that its assertion is by no means confined to the enemies of the Bible. Not a few of the most zealous and

consistent defenders of evangelical Christianity have earnestly insisted upon the danger of attempting to demonstrate scientific propositions by means of Scriptural statements. They maintain that it was no part of God's plan to forestall the results of scientific inquiry by a written revelation of the laws of nature, and that the language of the sacred writers, whenever they allude to natural phenomena, is to be interpreted as descriptive of appearances, as these would address themselves to the popular mind. In this view we entirely concur, and we are, therefore, ready to indorse the statement of an eminent living votary of physical science, that any attempt to fetter the scientific inquirer by the supposed meaning of inspiration, is certain to damage the latter in the estimation of a numerous class of intelligent and learned men.* As was long ago remarked, with some license of figure, by a distinguished and orthodox theologian, Dr. Henry More, "the unskilful insisting of our divines upon the literal sense

* W. B. Carpenter—"Varieties of Mankind;" in the English Cyclopædia of Anatomy and Physiology.

of Moses, has bred many hundred thousands of atheists." To illustrate this statement, there is no need to reproduce the trite taunt about Galileo, or to refer to any other case of ecclesiastical prohibition of free scientific inquiry occurring in an age less enlightened than the present. Numerous illustrations, derived from controversies of our own day, furnish a salutary lesson to those who might be disposed to dogmatize on the method of reconciling the assumed teachings of Scripture with the apparent revelations of science. If theologians rashly stake the authority of the Bible on the adoption of a particular set of scientific opinions, each of which they hold to be the "articulus stantis aut cadentis ecclesiæ," they should not be surprised if the exclusive votaries of science, accepting the issue thus inconsiderately presented, should come to regard with aversion a theology associated, as they have been led to believe, with propositions which they know to be both false and absurd. And thus it often happens, even at the present day, that the premature alarms of the timid friends of our holy religion, and

their denunciations of free scientific inquiry, become the determining cause of the very infidelity they would deprecate. It behooves us, therefore, in view of the interests of our sacred cause no less than the independent and legitimate claims of science, to be very cautious how we build up scientific dogmas on the popular sense of the Scriptures. We would, on the contrary, allow the utmost freedom of inquiry to the explorer of scientific truth, being quite satisfied that whatever conclusions he may succeed in establishing on reliable evidence, must in the end be found to harmonize with the revealed word of God; and that, precisely because they shall have been settled on evidence independent of the Scriptures, the demonstration of their conformity with the teachings of the Bible will furnish so many new tests of its divine origin and authority.

On the other hand, it can scarcely be necessary to insist that if it be unwise and unsafe for the mere theologian to meddle with questions of science, so by a parity of reason the mere man of science should confine himself to

his proper calling, and leave to those versed in the principles of Biblical exegesis, the task of interpreting the Scriptures, and thus, incidentally, of setting forth the harmony which must ever subsist between the two revelations which God has been pleased to give to his intelligent creatures, in his works and in his written word.

We assume, of course, that God has just as certainly spoken to us by the word of inspiration, as he has revealed himself in the works of nature. This is now generally conceded. Modern infidelity, more refined and more learned than that of the last century, rejects with scorn the old charge of imposture and fraud, and only assails the principles of interpreting the sacred volume which are adopted by orthodox believers. It is scarcely necessary to say that the genuineness, authenticity, and plenary inspiration of the Scriptures, and consequently their claim to be considered as an authoritative rule of faith and practice, are established on evidence so various and so convincing, that it would argue a very unstable mind to become unsettled in its belief on any of these points

by disputable opinions respecting complex and doubtful questions in natural science. The most timid and fearful Christian may, then, take courage and abide the final result with unwavering confidence. God will take care of his own truth. If during the interval of probation it be found necessary to modify, to some extent, long cherished views as to the proper interpretation of certain passages of Scripture, this is no more than was, in the nature of things, to be expected, and is just what has often occurred in former stages of the history of Biblical learning, to the ultimate benefit of religion, which suffered disparagement in the process, only because errors were retained so long and so tenaciously, and not because they were ultimately avoided by a more accurate Biblical criticism.

We have thought proper to make these preliminary remarks, partly because we have reason to fear that many well-meaning but, in our estimation, injudicious friends of religion need to be forewarned that in obstinately assailing scientific inquirers with the edicts of the Church, they only damage the good cause which it is

their wish and purpose to defend, but chiefly because we wish it to be understood that these principles shall govern us in the inquiry, upon which we now propose to enter, respecting the specific unity and common origin of the various races of mankind. In pursuing this inquiry, we shall, in conformity with the rules more or less distinctly indicated in the foregoing remarks, set aside for the present the testimony of Scripture, and treat the whole question as one of pure science. We propose to show that the leading authorities in science so far from contradicting the doctrine of the Bible with respect to man's unity of nature and parentage, do, in point of fact, arrive at the same conclusion on grounds purely scientific, and thus are in complete accord with St. Paul when he declares that "God hath made of ONE BLOOD all the nations of men for to dwell on all the face of the earth."

In discussing this question, we find a source of embarrassment at the very threshold, in the want of such a definition of the term *species*, as shall satisfy the disputants on the two sides of

this controversy. Cuvier's definition seems to us unexceptionable, and yet it does not appear to have given entire satisfaction to others. According to this definition "a species is a collection of all the beings descended the one from the other, or from common parents, *and of those which bear as close a resemblance to these as they bear to each other.*" In like manner De Candolle says, "we unite under the designation of a species all those individuals who mutually bear to each other so close a resemblance as *to allow of our supposing that they may have proceeded originally from a single being or a single pair.*" Let it be observed that neither of these definitions asserts that all the individuals of a species must have sprung from the same original parents. We admit that to insert this in our definition would be a *petitio principii.* The definitions only affirm that specific identity implies such a resemblance in kind and degree as is exhibited among descendants from a common stock. And yet for the reason that they suggest the idea of community of descent among all the individuals composing a species, those who deny this com-

munity of descent are averse to making use of them, and prefer the formula of Dr. Morton, which, as will be presently seen, has no real advantage. It is well known that Prof. Agassiz, without at first denying the specific unity of mankind, earnestly maintained that men were created in nations and with such original diversities as are now found to characterize the typical races. In other words, while he admitted that there was but one species of men, he recognized a number of *original varieties* or distinct types of the same specific nature. Here the fundamental idea of the term is that of close correspondence in governing qualities, or substantial identity of nature. And this too appears to us to be an unobjectionable definition, as not assuming any disputed point. This definition determines nothing as to what may be the tests of such essential unity, or what may be the limits of variation compatible with this identity of specific nature, but leaves all such points for subsequent investigation. And this is just as it should be, if we would avoid the fallacy of reasoning in a vicious circle. More

recently, this eminent naturalist, while advocating substantially the same doctrines, has so altered the meaning of the terms as to designate his original types as so many distinct species. We say that his opinions are yet virtually the same, for he still earnestly maintains the "unity of mankind," and declares that "whosoever will consult history must remain satisfied that the moral question of brotherhood among men is not any more affected by these views than the direct obligations between immediate blood relations." He has thus adopted the definition of Dr. Morton, who describes a species to be "a primordial organic form," and determines any given form to be primordial by its permanency as proved by history. A distinguished American zoologist, whose special studies have given him much practice in the discrimination of species among the higher classes of vertebrated animals, Dr. Bachman of Charleston, objects to this definition as "a cunning device, and to all intents an *ex post facto* law." We may observe, however, that the objection applies not so much to the definition properly

understood, for in a certain sense we believe it to be a true description, as to an illogical perversion of the historical test, which, under cover of a certain ambiguity in the terms of the definition, is rendered possible and easy. We concede the fact that a species is a primordial organic form, and if the records of history, written or monumental, extended back to the first creation of species, they would at once decide the question as to what types *were* primordial. But inasmuch as certain *acquired* peculiarities are often reproduced with perfect regularity so as to give rise, within the limits of a single original species, to "*varieties*" marked by characters as "*permanent*" as those which distinguish the species itself, it is obvious that unless the historical records extend back to such a period as wholly to preclude the idea of the appearance of variations between the first creation of the species and the date of the records, they furnish no satisfactory test whatever. We shall presently have occasion to dwell at greater length on this point, which is an important one in the controversy. We advert to it in this

connection only to show that while the much vaunted definition of Dr. Morton may be true in substance, it is yet no better than Cuvier's, and its use in a controversy like the present is objectionable, on the ground of its deceptive ambiguity.*

* Since the original publication of this paper in the "Protestant Episcopal Review," for January, 1857, the general subject of the characteristics of species has engaged the attention of one of the first naturalists of the age. We allude to Prof. Dana, of Yale Collge, who read a paper entitled "Thoughts on Species" at the Eleventh Annual Meeting of the American Association for the Advancement of Science, held at Montreal in August, 1857, which paper was subsequently reprinted in the "Bibliotheca Sacra" for October of the same year. He objects to any definition of the term "species" that involves the idea of a group. The idea of a group," he holds, "is not essential; and moreover, it tends to confuse the mind by bringing before it, in the outset, the endless diversities in individuals, and suggesting numberless questions that vary in answer for each kingdom, class, or subordinate group. It is better to approach the subject from a profounder point of view, search for the true idea of distinction among species, and then proceed onward to a consideration of the systems of variables." He then proceeds to show that "a species among living as well as inorganic beings, is based on a *specific amount or condition of concentrated force defined in the act or law of creation.*" We are inclined to think that this definition is not only accurate, but is moreover as free from difficulties in the application of it with a view to the discrimination of species, as can be predicated of any other definition which does not assume a disputed point. We shall in the sequel notice the conclusions of this eminent naturalist respecting the permanence of species, the susceptibility and limits of variation, and the collateral topics of the origin of species from one or more centres, and of their birth from one or more pairs of progenitors.*

* We have been much surprised to find that many readers (of the first edition of this book) have experienced some embarrassment in relation to the significance of

Adopting the definition already stated, the first question to which we shall address ourselves, has respect to the capacity for variations exhibited by many species under favorable conditions. The law of the permanency of primordial forms is admitted on all hands to be subject to qualifications. Within certain limits,

Prof. Dana's definition of species as given in the foregoing note. We cannot but think that all difficulty would have been removed had they read with attention his own explanations as cited in Appendix B, a part of which we now transfer so as to present it in connection with the general discussion of definitions of species. He first shows that in the inorganic or mineral kingdom "each element is represented by a specific amount or law of force, and that we even set down in numbers the precise value of this force as regards one of the deepest of its qualities, chemical attraction," and then turning to the organic world, deduces the same idea as essential to species, from the following considerations: "The individual is involved in the germ-cell from which it proceeds. That cell possesses certain inherent qualities or powers, bearing a definite relation to external nature, so that when having its appropriate nidus or surrounding conditions, it will grow and develop out each organ and member to the completed result; and this both as to chemical changes, and the evolution of the structure which belongs to it as subordinate to some kingdom, class, order, genus and species in nature. The germ-cell of an organic being developes a specific result; and like the molecule of oxygen, it must correspond to a measured quota or specific law of force. We cannot, indeed, apply the measure as in the inorganic kingdom, for we have learned no method or unit of comparison. But it must nevertheless be true that a specific predetermined amount or condition or law of force is an equivalent of every germ-cell in the kingdom of life. We do not mean to say that there is but one kind of force; but that whatever the kind or kinds, it has a numerical value or law, although human arithmetic may never give it expression. A species, then, among living beings as well as among inorganic bodies, is based *upon a specific*" (*i. e.*, definite in kind and quantity) "*amount or condition of concentrated force defined in the act or law of creation.*"

This definition, as observed by Prof. Dana himself, is tantamount to that of Dr. Morton when rightly understood. But there is this important distinction, that while Dr. Morton's formula expresses the outward manifestation, Prof. Dana's goes back of this to the consideration of the potential element or essential cause.

"When individuals," says Prof. Dana, "multiply from generation to generation, it is but the repetition of the primordial type-idea; and the true notion of the species is not in the group, but in the idea or potential element which is at the basis of every individual of the group."

it adapts itself to various changes in the influences under which the race may subsist. Thus, by carefully changing the food and other agents of vital stimulation, we may modify, to an extent sometimes quite considerable, the outward structural character of many plants and low animal organisms; and these newly acquired characters may then be perpetuated by hereditary transmission, under the influence of the law of assimilation between parent and offspring, even though the causes which originally determined the variation from the primitive type have ceased to operate. A similar effect is produced in those cases in which a given variation appears accidentally in a single individual and is then transmitted to his offspring. This is conspicuously exemplified in the human races by a strong tendency to the transmission, throughout large families, of characters whether physical or moral, which had originated as accidental peculiarities in one of the ancestors of the stock. Such individual peculiarities are commonly lost after a time by reason of the successive admixture of new elements; but

when persons of both sexes all possess some striking peculiarity, and intermarry among themselves, the peculiar characters tend to become constant. In other words, a *permanent variety* is likely to arise. A permanent variety, as distinguished from a species, is, then, a group of individuals marked by the constant reproduction of some distinctive character, which, however, may be shown to have been *acquired* in addition to the typical characters of the species within the limits of which this and, it may be, other varieties also have arisen. Varieties, therefore, while in their origin they constitute an apparent or partial exception to the law of assimilation between parent and offspring, do yet by their permanent reproduction exemplify the full operation of that law.*

The existence of *permanent varieties* so completely refutes some of the most essential arguments used by modern advocates of the original diversity of the human races, that they are driven to the necessity of denying the possi-

* See Appendix A.

bility of the phenomenon altogether. We shall, therefore, present an abstract of the evidence on which the assertion has been substantiated. And first we shall refer to one or two well authenticated instances, in which certain congenital characters, originating as accidental peculiarities, have been reproduced in the offspring through successive generations, so as ultimately to represent the distinctive features of a new and permanent variety. This law of the animal economy is so familiar to breeders of valuable animals, that we are at no loss to multiply examples derived from their attempts to improve their stocks. Let a few suffice.

"In the year 1791, one ewe on the farm of Seth Wright, gave birth to a male lamb, which, without any known cause, had a larger body and shorter legs than the rest of the breed. The joints are said to have been longer, and the fore-legs crooked. The shape of this animal rendering it unable to leap the fences, it was determined to propagate its peculiarities, and the experiment proved successful; a new race

of sheep was produced, which, from the form of the body, has been termed the Otter breed. It seems to be uniformly the fact, that when both parents are of the Otter breed, the lambs that are produced inherit the peculiar form. Only one case has been reported as an exception to this remark, and that was questionable."*

In Darwin's "Voyage of a Naturalist," we find the following account of a singular breed of cattle, which have originated among the Indians south of the Rio Plata, in the Banda Oriental, and which is called the Niata breed. "They appear externally to hold nearly the same relation to other cattle, which bull-dogs hold to other dogs. Their forehead is very short and broad, with the nasal end turned up, and the upper lip much drawn back; their lower jaws project outwards; when walking, they carry their heads low on a short neck, and their hinder legs are rather longer, compared with the front legs, than is usual. Their bare teeth, their short heads, and upturned nostrils, give them the most ludicrous self-confident air

* Natural History of Man. By J. C. Prichard. London, 1843. P. 45.

of defiance imaginable. Since my return, I have procured a skeleton head, through the kindness of my friend Captain Sullivan, R. N., which is now deposited in the College of Surgeons.* Don F. Muniz, of Luxan, has kindly collected for me all the information which he could respecting this breed. From his account, it seems that about eighty or ninety years ago they were rare, and kept as curiosities at Buenos Ayres. The breed is universally believed to have originated amongst the Indians southward of the Plata, and it was with them of the commonest kind. Even to this day, those reared in the provinces near the Plata show their less civilized origin, in being fiercer than common cattle, and in the cow easily deserting her first calf, if visited too often or molested. It is a singular fact, that an almost similar structure to the abnormal one of the Niata breed characterizes, as I am informed by Dr. Falconer, that great extinct ruminant of India, the Sivatherium. The breed is very

* "Mr. Waterhouse has drawn up a detailed description of this head, which I hope he will publish in some journal."

*true;* and a Niata bull and cow invariably produce Niata calves. A Niata bull with a common cow, or the reverse cross, produces offspring having an intermediate character; but with the Niata characters strongly displayed. . . . . During great droughts, when so many animals perish, the Niata breed is under a great disadvantage, and would be exterminated if not attended to; for the common cattle, like horses, are able just to keep alive by browsing with their lips on twigs of trees and reeds; this the Niatas cannot so well do, as their lips do not join, and hence they are found to perish before the common cattle. This strikes me as a good illustration of how little we are able to judge from the ordinary habits of life, on what circumstances, occurring only at long intervals, the rarity or extinction of a species may be determined."*

Dr. Bachman, having cited a part of the foregoing passage, makes the following pertinent comment: "We have here another example in

* Charles Darwin, M. A., F. R. S. Voyage of a Naturalist round the World. New York, 1855. Vol. I., pp. 186–187.

evidence of the fact, that without the slightest intermixture of foreign varieties, new breeds of cattle spring up in America. They made their first appearance about eighty years ago, when one was occasionally brought to Buenos Ayres. Now they have become the only race in an immense region of country, where they are nearly wild. What causes have operated to produce this variety? There are no wild animals, not even the buffalo, in that country, from which any admixture could by any possibility have been derived. Were we not positive of their origin, they would unquestionably be regarded as a new species."*

The limits necessarily imposed upon us, preclude more extended specifications under this head. We must content ourselves with referring the reader to the numerous other instances recorded in Prichard's "Natural History of Man;" Lawrence's "Lectures on Physiology, Zoölogy and the Natural History of Man;" Carpenter on the "Varieties of Mankind" in in the Cyclopædia of Anatomy and Physiology;

* J. Bachman, D. D. Loc. cit., pp. 305, 306.

and Dr. Bachman on "the Doctrine of the Unity of the Human Race examined on the principles of science."

Let us now consider the case in which permanent varieties have sprung from the continued operation of the same modifying agencies through a series of generations, until certain peculiarities, which may respect either the bodily structure or the psychical temperament, become ultimately congenital, though in their origin they were gradually acquired. "There is one great field of observation which furnishes abundant evidence of the origin of numerous *permanent varieties* within the limits of single species, in the tribes of native European species, which are known to have been transported to America since the discovery of this continent, in the latter part of the 15th century. Many of these races have multiplied exceedingly on a soil and under a climate congenial to their nature. Some have run wild in the vast western forests, and have there lost all the most obvious traces of domestication. The wild tribes are found to differ, physically, from the

domestic breeds from which they are known to have issued, and there is good reason to regard this change as a restoration, in part, of the primitive characteristics of the wild stocks, from which the tamed animals had themselves descended. The comparison of these wild races with our domesticated breeds, affords, at least, some curious and interesting observations. The animals which were transported by the Spaniards to America, are the hog, the horse, the ass, the sheep, the goat, the cow, the dog, the cat, and the gallinaceous fowls."* With reference to each of these species, the author has collected a body of authentic and most interesting observations relative to the changes which it has undergone in becoming restored to the wild state. We shall quote a portion of his remarks relating to the changes which the hog has undergone since its introduction into America, and would advise our readers to consult his admirable works for further details.

The hog is known not to be indigenous to this country, but was introduced into St. Do-

* J. C. Prichard. Loc. cit., pp. 27, 28.

mingo at the first discovery of that Island in 1493, and successively to all the places where the Spaniards formed settlements. These animals multiplied with great rapidity, and soon infested the forests in large herds. At length, under the influences of their wild state, they have resumed the characters of the original stock; that is, their appearance very closely resembles that of the European wild boar, from which the domesticated breeds have sprung. Their ears have become erect; their heads are larger, and their foreheads vaulted at the upper part; their color has lost the variety found in the domestic breeds, the wild hogs of the American forests being uniformly black. The hog which inhabits the high mountains of Paramos bears a striking resemblance to the wild boar of France. His skin is covered with thick fur, often somewhat crisp, beneath which is found in some individuals a species of wool. Thus the restoration of the original characters of the wild boar, in a race known to have sprung from domesticated swine brought over to America by the Spaniards, removes all reason for

doubt, if any had existed, as to the identity of the wild and domesticated stocks in Europe, and we may safely proceed to compare the physical characters of these races as *varieties*, which have arisen in one species. We note, then, the restoration of one uniform black color, and the change from sparse hair and bristles to a thick fur with a covering of wool. But besides these, we note a very remarkable change in the shape of the head. Blumenbach long ago pointed out the great difference between the cranium of the domestic swine and that of the primitive wild boar, and remarked that this difference is quite equal to that which has been observed between the skull of the Negro and the European. In addition to numerous other points of difference, the enormous length of the wild boar's tusk, amounting sometimes to ten or twelve inches, is a very conspicuous one. Swine, continues Blumenbach, in some countries have degenerated into races, which in singularity far exceed anything that has been found strange in bodily variety among the human race. Swine with solid hoofs were known to the ancients, and are

yet found in Hungary and Sweden. Dr. Bachman has ascertained that these have recently occurred as an accidental variety on the Red River. The European swine, first carried by the Spaniards in 1509 to the island of Cubagua, at that time celebrated for its pearl-fishery, have there degenerated into a monstrous race, with toes which were half a span in length."*

We are informed by Dr. Bachman, that "the cattle in Opelousas, in Western Louisiana, have, without a change of stock within the last thirty years, produced a variety of immense size, with a peculiar form and enormous horns, like the cattle of Abyssinia. They have now formed a permanent race, and we were very recently informed that all the other breeds had disappeared from the marshy meadows of Opelousas."†

Illustrations on this point might be multiplied to an almost indefinite extent. Dr. Bachman, indeed, avers, as the result of his extended

* We have borrowed the above account of the varieties of swine from Dr. Prichard.

† J. Bachman, D. D. Op. cit, p. 181.

observations on this subject, that "every vertebrated animal, from the horse down to the canary-bird and gold-fish, is subject in a state of domestication, to very great and striking varieties, and that in the majority of species, these varieties are much greater than are exhibited in any of the numerous varieties of the human race."

So, too, one of the first physiologists of the age expresses himself thus: "The longer the action of external influences," tending to produce variations of species, "is continued, the more constant does the particular variety become, and the more does it acquire the character of a type. To these external influences belong the climates or zones in which the animals live. . . . . Climate modifies also the '*habitus*' and size of animals. Cattle transported from the temperate zones of Europe,—for example, from Holland or England to the East Indies,—are said to become considerably smaller in their succeeding generations. On the other hand, the skin of the cattle carried to South America, has, in a series of generations, gradually be-

come so much changed in its properties that the Brazilian hides now supply the best leather. The guinea-pig, *Cavia aperea*, which in its native country is of a grey color, since its introduction into Europe has become changed into a variety marked with brown, black and white spots. The elevation of the locality above the sea, also, independently of the degree of latitude, has an influence over the forms of animals. . . . But the food also modifies the form and nutrition of animals; hence, in the low countries of Holland, East Friesland and Holstein, the cattle are remarkable for their large size. . . The concurrence of different conditions of internal as well as external nature, which cannot be severally defined, has produced the existing races or *fixed varieties* of the different species of animals; the most remarkable of which varieties are to be met with in those species which are susceptible of the most extended distribution over the surface of the earth."*

We may, then, regard it as an established

* J. Müller, M. D., Elements of Physiology, translated by W. Baly. London, 1842, p. 1664.

fact that under the influence of causes sometimes appreciable, though often quite unknown, animals may acquire structural characters, differing in many respects from those of the parent stock, and then transmit such peculiarities to their own offspring with entire constancy, so as to give rise to a new breed. It is interesting to remark that not only are the *structural* characters of animals of the same original stock liable to undergo variations, accidental in their origin, yet afterwards regularly transmitted to their offspring, but that the same may be predicated of certain physiological and psychological traits; although the limits of possible departure from the typical characters of the original stock are doubtless more narrow in respect to these qualities, than they are in respect to bodily conformation. Sir Charles Lyell states that some of his countrymen, engaged in conducting one of the principal mining associations in Mexico,—that of Real del Monte,—carried out with them some English greyhounds of the best breed, to hunt the hares which abound in that country. The great platform, which is the

scene of sport, is at an elevation of about nine thousand feet above the level of the sea, and the mercury in the barometer stands habitually at the height of about nineteen inches. It was found that the greyhounds could not support the fatigues of a long chase in this attenuated atmosphere; and before they could come up with their prey, they lay down gasping for breath; but these same animals have produced whelps which have grown up, and are not in the least degree incommoded by the want of density in the air, but run down the hares with as much ease as the fleetest of their race in England.* Dr. Prichard relates a parallel case, exemplifying the gradual process of acclimatization and the subsequent regular transmission, by descent, of the newly acquired power. Within the present century geese were first introduced on the plateau of Bogota. At first the eggs laid were very few, and scarcely a fourth part of these was hatched; of the young goslings, more than half died in the first month; the second generation, produced by the sur-

* Sir C. Lyell. Principles of Geology. London, 1850. P. 572.

vivors, was more successful, and the breed has gradually approximated to the vigor of the same stock in Europe.

We may remark, in passing, that this tendency to the regular transmission to offspring of characters acquired by the progenitors of a stock, in the gradual process of acclimatization, furnishes an entirely satisfactory explanation of the alleged immunity enjoyed by our negroes from attacks of yellow fever and malarious diseases. The phenomenon is but another instance of the general principle which has just been stated. The power of resisting certain morbific influences connected with climate, though acquired with difficulty, and as the result of a gradual change taking place through numerous successive generations, may yet, when once fully acquired, be regularly transmitted to offspring, and thus become characteristic of a race. That the character should be so tenacious as to resist the opposite influences of other climates through a series of generations, need not excite surprise, when it is remembered that a positive character once stamped upon the system

is not easily lost by merely withholding the conditions which originally produced it, and that the process by which it was riveted upon certain races of African negroes, extended through many centuries. It accords with this view, that our negroes are not wholly exempt from attacks of these diseases, as was proved in the disastrous epidemic in Norfolk and Portsmouth during the summer of 1855. Of course this partial immunity cannot, consistently with the recognized principles of science, be invoked as a mark of specific difference between the African and other races, for specific tests admit of no exception.*

Sir Charles Lyell records several curious and interesting instances of "*acquired instincts become hereditary.*" The inhabitants of the banks of the Magdalena employ a mongrel race of

* It should be observed here that the above statement is not invalidated by the alleged fact that yellow fever is not an African disease; for, as has been remarked by Dr. Barton, of New Orleans, "although the yellow fever proper hardly exists in Africa, an *equivalent malignant type of fever does*, to which the negroes are habituated." (*Report on the sanitary condition of New Orleans, by Dr. E. H. Barton. 3d Edition. Supplement p.* 274.) The truth of this statement is entirely irrespective of Dr. Barton's peculiar opinions on the contested question of the identity of yellow and bilious fevers.

dogs to hunt the white-lipped pecari. The address of these dogs consists in restraining their ardor, and attaching themselves to no animal in particular, but keeping the whole herd in check. Now, among these dogs some are found, which, the very first time they are taken into the woods, are acquainted with this mode of attack; whereas, a dog of another breed starts forward at once, is surrounded by the pecari, and, whatever may be his strength, is destroyed in a moment.

The actions of a pointer may be referred to a mere modification of a natural habit, but the same explanation will not apply to the case of the retriever; and yet it has been satisfactorily ascertained, that the peculiar faculty which characterizes this breed, though originally impressed upon the animal with great labor and difficulty, is now inherited by the offspring, so that a young whelp, separated very early from its parent, and kept constantly under the eyes of an eminent naturalist, (M. Magendie,) performed its part when first carried to the field, with as much steadiness as dogs that had been duly trained.*

* Lyell. Op. cit., pp. 571, 572.

From a vast array of parallel facts, recorded by himself and others, Dr. Prichard deduces the following conclusions, the accuracy of which cannot be successfully contested : " I. That when certain animals are transported to a new region, not only individuals, but also races, require to be harmonized in physical constitution to the climate. II. This acclimatization, as it is termed, consists in certain permanent changes produced in the constitution of animals, which bring it into a state of adaptation to the climate. III. A restoration of domestic animals to the wild state causes a return towards the original characters of the wild tribe. IV. Permanent changes or modifications in the functions of life, may be effected by long-continued changes in the habitudes which influence these functions, as exemplified in the permanent production of milk by the domesticated breeds of cows, which has been produced by an artificial habit continued through several generations. V. Hereditary instincts may be formed, some animals transmitting to their offspring acquired habits, and thus the psychical as well as the

physical character of the races undergo variation through the influence of various causes on the breed."*

But let it be noted, that the existence of any number of varieties within the limits of an assumed single species, whether the diversities respect the physical or the psychical characters of the races, and whether they be brought about by obvious causes or depend upon some inappreciable tendency to spontaneous variation, does not in any degree tend to throw a doubt upon the doctrine of "permanence of species;" for, however wide may be the limits of variation, there *is* yet a limit in every case; and, moreover, all the varieties of any single species, however numerous and diversified, do yet retain, as a common heritage, the unmistakable distinguishing marks of that species. The possibility of identifying all the diversified breeds of dogs, as one species, furnishes a striking exemplification of this remark. We shall presently see that this is the ground taken by F. Cuvier, Owen, and a large majority of the

* Prichard. Loc. cit., pp. 39, 40.

most eminent naturalists of the age. It is true that Messrs. Nott and Gliddon, with singular complacency, affirm that these great men knew nothing of the "monumental history" of man and other animals, including the dog, as preserved among the antiquities of Egypt; but, inasmuch as most of these eminent savans have lived and written since the publication of the researches of modern Egyptologists, and Owen's latest and most emphatic utterances have been made subsequently to the appearance of even the "Types of Mankind," we are not at liberty to assign such an explanation of their zoölogical errors.

We have extended our remarks to an inconvenient, and we fear a tedious length, in illustration of the doctrine that *varieties*, when kept separate by breeding *inter se*, are often as *permanent* as species; because the denial of this fact is a cardinal point with those who deny the unity of the human species. Admit this doctrine, which it does appear to us no reasonable mind can now reject, and the "monumental history," discovered in Egypt, only

proves that some of the now existing varieties of men and dogs had their origin prior to the date of the inscriptions. Assign to these the earliest date you please, there must, of course, have been several centuries between that period and the commencement of the world's history. The inscriptions prove that such and such varieties existed so many thousand years ago. Granted. We ourselves contend that certain varieties are permanent. But when you conclude that, because the types have not changed since those inscriptions were made, therefore they were *created* as distinct species, we cannot withold an expression of surprise that you overlook the obvious flaw in your argument, and we protest against the manifest *petitio principii*. Sir C. Lyell has shown that species, susceptible of modification, may be greatly altered in a few generations.* Indeed, in all the instances of such variations, in which the process has been made known, the maximum amount of change was reached in a comparatively short time, and thenceforward the

* Principles of Geology, p. 570.

newly acquired characters were regularly transmitted by descent. We have already cited a number of instances from among the lower animals. We shall in the sequel have occasion to refer to the occurrence of similar phenomena in the human family, within historic and even modern times.*

* See Appendix B.

## CHAPTER II.

### MEANS OF DISCRIMINATION BETWEEN SPECIES AND PERMANENT VARIETIES.

THE fact that *varieties* may occur within the limits of a single species and be permanently perpetuated being thus established on incontrovertible evidence, the question presents itself, How are we to recognize such groups? or in other words, How can we ascertain whether two groups of individuals, possessing numerous points of resemblance, but yet marked by some distinctive features, are distinct species, or are only permanent varieties of one species? Of course, the most satisfactory and conclusive test would be authentic historical evidence, going back to the origin of a given race. This test is especially important, as not only settling the question in any particular case in regard to which authentic evidence may have been col-

lected, but as verifying data, which, on the grounds of analogy, we may apply to other cases where direct historical evidence is wanting. It furnishes us with examples of known variation, and indicates at the same time the extent and direction of possible changes that are yet compatible with specific unity. It has brought to light the interesting fact, that there is a great diversity in respect to *capacity for variation* among animals, even those that are most nearly allied to each other in other particulars. Hence, some not possessing this capacity are restricted to particular conditions of climate, food, etc., while others are more widely dispersed, simply because they have the power of adapting their physical and psychical constitutions to a wider range of conditions.* It also proves that "some mere varieties are possibly more distinct than certain individuals of distinct species."† A most admirable exposition of the final causes of this providential arrangement is found in the chapter of Lyell's

*W. B. Carpenter. Varieties of Mankind.
†Lyell. Op. cit, p. 559.

Principles of Geology, to which we are indebted for many of the facts and arguments already given. "If it be a law, for instance, that scanty sustenance should check those individuals in their growth, which are enabled to accommodate themselves to privations of this kind, and that a parent, prevented in this manner from attaining the size proper to its species, should produce a dwarfish offspring, a stunted race will arise, as is remarkably exemplified in some varieties of the horse and dog. The difference of stature in some races of dogs, when compared to others, is as one to five in linear dimensions, making a difference of a hundred-fold in volume. Now, there is good reason to believe that species in general are by no means susceptible of existing under a diversity of circumstances, which may give rise to such a disparity of size, and, consequently, there will be a multitude of distinct species, of which no two adult individuals can ever depart so widely from a certain standard of dimensions as the mere varieties of certain other species—*the dog, for instance.* Now we have

only to suppose that what is true of size may also hold with regard to color, and many other attributes, and it will at once follow that the degree of possible discordance between varieties of the same species may, in certain cases, exceed the utmost disparity which can arise between two individuals of many distinct species. The same remarks may hold true in regard to instincts: for, if it be foreseen that one species will have to encounter a great variety of foes, it may be necessary to arm it with great cunning and circumspection, or with courage, or other qualities capable of developing themselves on certain occasions; such, for example, as those migratory instincts which are so remarkably exhibited at particular periods, after they have remained dormant for many generations. The history and habits of one variety of such species may often differ more considerably from some other than those of many distinct species, which have no such latitude of accommodation to circumstances."*

The horse, the dog, horned cattle, swine, and

* Lyell. Op. cit p. 560

in a word all the domesticated animals which follow man in his migrations, and like him manifest a power of accommodation to widely varied conditions of climate, exhibit also, as has already been intimated, an extraordinary capacity for variation, so that mere varieties arising within the limits of any one of these species,—say the hog, in regard to which we have already cited unquestionable facts that will serve to illustrate the point now under consideration,—will exhibit differences far greater in apparent significance than in other cases would suffice to indicate specific distinctions.

The question now recurs whether, when historical proof cannot be had, there is any other mode of ascertaining whether two or more groups of somewhat dissimilar animals are different but allied species, like tigers and leopards, or are only permanent varieties of one species, like the different breeds of hogs which are known to have sprung from a common stock.

Adverting to the fact that it is the *constancy* of a differential character, however intrinsically unimportant it may appear, which serves to in-

dicate the distinction of species, we are prepared to understand that, next to historical evidence tracing a given stock through a long interval of time and under great variations of external conditions, so as to note the successive changes it may have undergone, the most important source of information is found in obtaining an assemblage of as many forms as possible of each type, with the view of comparing them with each other for the sake of determining whether the supposed specific characters are constant and well-marked throughout, or whether diverse forms tend to run together by intermediate gradations. We are indebted to Dr. Carpenter for an apt illustration of the principle in question. "Two Terebratulæ (a genus of Brachiopod Bivalves) are brought to us from different parts of the great Southern Ocean, the one of which has the edges of the valves of the shells thrown into deep plications, whilst in the other they are quite smooth. Now in most other Bivalve Molluscans such a difference would be justly admitted to afford a valid specific character, and the conchologist, who

had only these two shells before him, would be fully justified, by the usual rules of the science, in ranking each as a distinct specific type. But as his collection extends, intermediate forms come into his possession ; and at last he finds that he can make a continuous series, passing, by the most gradual transition, from the smoothest to the most deeply plicated form. Thus, then, the supposed validity of this distinction is altogether destroyed ; and it becomes evident that the most plicated and the smoothest of these Terebratulæ must be regarded as belonging to one and the same species, notwithstanding the marked diversity of their extreme forms."*

It is on similar grounds that the most eminent naturalists admit the specific unity of all the diversified varieties of the dog. As was well remarked by F. Cuvier, there is no alternative between adopting this conclusion and falling into the absurdity of admitting at least fifty species of dogs, all distinguished by permanent differences, and yet capable of unlimited cross-

* W. B. Carpenter. Ubi supra.

breeding. Prof. R. Owen insists upon the same doctrine. Adverting to the extraordinary differences in cranial conformation between the large greyhound on the one hand and the smaller spaniel on the other, he adds: "But yet under the extremest mask of variety so superinduced, the naturalist detects in the dental formula, and in the construction of the cranium, the unmistakable generic and specific characters of the *Canis familiaris*."* It is also pertinently remarked by Sir Charles Lyell "that the numerous races of dogs which we have produced by domesticity are nowhere to be found in a wild state. In nature we should seek in vain for mastiffs, harriers, spaniels, greyhounds, and other races, between which the differences are sometimes so great, that they would be readily admitted as specific between wild animals; yet all these have sprung originally from a single race, at first approaching very near to a wolf if indeed the wolf be not the true type, which at some period or other was domesticated by man."† We have just seen, it

* Zoölogical Transactions, vol. iii.

† Lyell's Principles of Geology. London, 1850, p. 548.

is true, that the authors of the "Types of Mankind" attempt to discredit the conclusions of naturalists with reference to the specific unity of the dog, by having recourse to Egyptian monumental inscriptions, which, however, only serve to show that some of the now existing varieties had already arisen prior to the date of those inscriptions. They do not touch the question of their origin, and we are, therefore, constrained to treat the question on principles, the validity of which is fully recognized by all philosophical naturalists. Let it be observed, too, that whatever be the original causes of these variations, even when some of them appear to depend on climate, as soon as they become permanent they are transmitted irrespectively of the continued operation of the causes which had given rise to them; so that breeds originating in different localities, under the influence of different conditions connected with climate, after being once established will be perpetuated without change in one and the same climate. A noteworthy and interesting exception to this remark is found in the case

of the lapse of domesticated breeds into the wild state, when the *varieties* dependent on domestication are likely to merge into one common type, which approximates more or less closely to the original stock whence the domestic breeds had sprung. According to Dr. Carpenter,* this change has taken place in various parts of the world in the case of dogs, (the very case, namely, in which Dr. Nott contends that types are so permanent,) which were introduced from Europe and which have since become wild ; but it has been particularly noticed in Cuba, where the exact period at which the dog was introduced, that of the invasion by the Spaniards at the end of the fifteenth century, is known. The same fact is mentioned by Sir Charles Lyell,† with respect to the horse, the ox, the boar and the dog. With reference to this partial exception to the permanency of well-established varieties it should be observed, first, that in all the recorded instances of its occurrence several varieties of the same original

* W. B. Carpenter's Zoölogy, vol. i. p. 35.
† Lyell. Op. cit., p. 563.

stock were intermingled in this process of restoration to the wild state; and secondly, that the wild state was the original condition of the primordial types. Lest any of our readers should consider the demonstration of the principle now under review unsatisfactory by reason of the doubt which has been recently expressed as to the specific unity of the dog, we will cite the somewhat parallel case of the common wolf. According to Dr. Bachman, "The common wolf (*Canis lupus*) has been described by Linnæus, Buffon, Cuvier, and all the eminent naturalists who have written on the mammalia of Europe, as identical with the wolf of America. Sir John Richardson, De Kay, and recently Audubon and Bachman, on the history of American quadrupeds, agreeing with the views of European naturalists, have placed all the large North American wolves (not including the small prairie wolf) as varieties of the European wolf; and even Col. Smith himself says, 'Our somewhat extensive researches led us to subscribe' to the opinion of the Prince of Wied 'that they are the same.' This wolf is like man, a cosmopo-

lite, and has spread over a considerable portion of the world. . . . . Its geographical range is wider than that of any species among the inferior animals, and is only exceeded by that composing the human race. Let us now examine how these changes in climate, food, or some other influences at present hidden from our knowledge, affect this species. In color, it is white in the northern regions, and in the elevated countries on both continents. In the temperate latitudes of Europe and America, it is grey. It is black in the South, as in Florida, Georgia, and Louisiana. In the western part of Missouri it is clouded, and has been named *Canis nubilis*. In Texas it is red. These varieties differ widely in size, those of the North being nearly double the size of those of the South. They differ in the conformation of the head and the skull. In an examination to which we were invited, of the wolves preserved in the British Museum, and those contained in the gardens and museum of the Zoological Society of London, all the naturalists present expressed their surprise and perplexity

at the vast differences existing not only in color, but in size, form, and skull in different specimens. In cold climates their heads were broader and muzzles shorter than in those found farther south; still we found individuals which, like links in a chain, connected all these varieties so closely that they could not be separated into different species. Thus naturalists, after an examination for two hundred years of all the varieties of the wolf, are obliged to admit that this wide-roaming animal, which changes its form and color at every remove to new regions, is one and the same species."*

But sometimes it is not practicable to obtain such a collection of varied types as will serve to connect two dissimilar specimens about whose specific unity we may be in doubt, and yet the difficulty may depend more upon the slenderness of our observations than on the non-existence of the transitional forms. In such cases we sometimes rely, provisionally at least, on the apparent significance of the differential characters, our judgment being mainly deter-

* J. Bachman, D. D. Op. cit, p. 121.

mined by the value of similar differences in the case of nearly allied animals whose specific relations have been established on other grounds. This, however, is a very equivocal test, by reason of the fact already stated, that differences which in one tribe are significant of specific diversity, are, in another tribe, quite compatible with specific unity. Conclusions founded on such data only must, therefore, be held as provisional, and subject to future confirmation or correction.

A much more valid ground of distinction is often obtained by observing whether there is any character in one of the given races which is never absent in any of the individuals of that race, and never present in those of the other. This test, it will be observed, is similar to that just considered, which respects the gradational merging of races into one another, in that it requires the observation of a large number of individuals; but it does not impose the necessity of collecting numerous links in a chain connecting remote extremes. A single demonstration of the inconsistency of any given character in-

validates it as a ground of specific distinction. Now, let it be observed that this test, like that derived from a gradational series, is far more valid in its positive than in its negative application. The discovery of a gradational series of intervening links serving to connect extreme races, and the demonstration of the inconstancy of any alleged differential character, are far more valid in establishing specific unity, than the mere failure to do either could avail to prove specific diversity, since the failure might depend on too limited or inaccurate observations, even though, by the aid of monumental inscriptions, we had succeeded in going back to an extremely early date in the world's history.

We proceed now to consider the value of physiological and psychological peculiarities in the discrimination of species. These, it has been well remarked, often afford a much surer criterion than can be obtained by the examination of structural characters, since it is more easy to believe that the forms of organs and the color of the skin may vary, than that the essential nature of the animal can be changed. We

should therefore regard identity, or close correspondence in physiological characters, as outweighing in favor of specific unity a very considerable amount of structural difference that might otherwise seem to favor the idea of a specific distinction. This principle is so generally admitted by the most profound and trustworthy naturalists, that the few who advocate the doctrine of multiple human species, being constrained to admit the physiological unity, find it necessary, as we have already seen, to use the term *species* in a different sense from that in which it had been generally accepted. They grant that physiological conformity demonstrates unity of essential nature, but they contend that there may be *original varieties*, and these they term SPECIES. Now we grant that *originally* distinct types are properly to be ranked as distinct species, but we deny that physiological unity can be predicated of such. We shall attempt to show that such unity always coïncides with unity of origin.

By far the most important physiological test of specific relationship is derived from a law of

reproduction. We know that the most diverse breeds, if belonging to the same original stock, breed together without repugnance, and produce offspring as prolific as either of the parent races. We also know, that with few exceptions animals of different though closely allied species have an invincible repugnance to each other, and never, except under restraint, or by means of deception, cross their breeds. The lion and the tiger resemble each other so nearly that even Cuvier is said to have been unable to distinguish the cranium of one from that of the other, and yet no one has ever heard of a cross between these nearly allied species. In a few cases, however, mainly by the intervention of man, allied species have been induced to unite, with the result of producing a hybrid offspring, partaking to some extent of the characters of both parents. Generally, these hybrids are either entirely barren, or they produce offspring only when joined with one of the parent stocks. "In one or two instances, indeed, a mule has produced offspring by union with a similar animal, but this is probably the extreme limit, since until

recently no one has pretended that a hybrid race could be perpetuated. It is, moreover, a remarkable fact, that hybrid individuals are seldom found in a state of nature, being almost always the result of the artificial interference of man with nearly allied species of the domesticated animals."* Thus in an attempt to obtain a cross between the ass and a female zebra, it was found necessary to paint the ass with stripes before the zebra could be induced to receive him, and it is well known to be commonly necessary to blindfold mares when they are brought into connection with the ass.† He who "made the beast of the earth after his *kind*, and the cattle after their *kind*, and every thing that creepeth upon the earth after his *kind*," and pronounced it all "good," has taken care to interpose an adequate barrier to the possibility of confounding the beautiful order and symmetry of His work in the production and perpetuation of monstrous mongrels, by implanting in animals of diverse species an instinctive and almost

* Carpenter.

† J. Bachman. Op. cit., pp. 53, 54.

invincible aversion to sexual intercourse, and has still further guarded against the consequences of the violent interference or the cunning devices of man by affixing the seal of sterility on the offspring of such unnatural union.

Dr. Morton of Philadelphia is almost the only naturalist of any eminence in our own day who has attempted to controvert this position; and it deserves remark that he did it avowedly to support a foregone conclusion. The study of human crania had been with him a cherished speciality. It was, perhaps, to be expected, that in his almost exclusive devotion to this study, he should form an exaggerated estimate of the value of the craniological peculiarities of the different races of men, the discovery and exposition of which form the principal, if not the only title, to his permanent reputation as a man of science. Accordingly we find him, in the "Crania Americana," denying that such peculiarities could have been *acquired*, and contending that they were *impressed* upon the immediate descendants of Noah. This last position, we now learn, was only taken as a concession

to the religious prejudices of the theological world; his real opinion, as subsequently avowed in a private letter to Dr. Nott, published in the "Types of Mankind," being, that there was a plural origin for the different races of men."* When at length Dr. Morton wished to make a public avowal of this opinion, he found that the power of unlimited cross-breeding among the races stood mightily in the way of his finding popular acceptance for his new doctrine of multiple human species. It was then necessary to overthrow the almost universally accepted doctrine of the sterility of hybrids; and with such prepossessions, which, doubtless, were all the stronger that he had felt himself constrained to withhold the avowal of them for so long a time, he entered upon the inquiry with reference to the laws of hybridity, and published his first results in Silliman's Journal, in 1847. It so happened that Dr. Bachman, who is admitted to stand in the very front rank of American naturalists, and to be without a rival in the special department of mammalian zoölogy, had

* Types of Mankind. By Nott and Gliddon. Memoir of Morton.

made extended and original experiments on this subject some years prior to the date of this publication. These investigations were made, he avers, without reference to the question of the unity or diversity of the human races, and without the least bias of judgment as to the probable result, his only object being to satisfy his mind in regard to the true origin of the many striking varieties that existed in the various departments of nature, and which had become as permanent as the species themselves. He wished to ascertain whether the admixture of two species might not produce a fertile offspring, which would in this way propagate what might be regarded as a new species. He subjected plants, birds, and quadrupeds to those modes by which two different species could produce offspring. In this way he succeeded in obtaining, either by his own labors or by receiving from others who had produced them, a larger number of hybrids than any other person in this country. They proved sterile in every instance but one,—the hybrid between the China and common goose,—and this proved to be only

partially and temporarily fertile. Supposing at first that it was perfectly fertile, Dr. Bachman recommended it to the neighboring planters as an improved breed which produced eggs several weeks earlier than the common goose. After five years' trial, however, he ascertained that many of the hybrids laid eggs which were not impregnated. The true hybrids, in many instances, were only prolific with the pure breeds, and many were absolutely sterile. Those planters who had not a considerable number of the originals of either species in their flocks, complained that their geese ceased to be prolific, and laid *clear* eggs. At length the hybrid productions are regarded as ruinous to the flock, the different species are beginning to be kept separate, and the common goose is everywhere in Carolina rooting out the China goose, the former being more prolific than the hybrids.*

At the date of Dr. Morton's first essay on hybridity these investigations of Dr. Bachman had not been made public. Believing that Dr.

* J. Bachman, D. D. Op. cit.

Morton would, by his own industry and through the aid of his friends, at the extensive Library of the Academy of Natural Sciences and elsewhere, collect all the cases of hybridity that were on record, Dr. Bachman determined not to interrupt his labors until they had been concluded, and accordingly remained silent for eight months. At length, however, in 1850, he replied publicly to Dr. Morton's essays, in several chapters of a work on the "Unity of the Human Race Examined on the Principles of Science," to which we have already more than once referred. He examines in detail all the facts collected by Dr. Morton, and shows conclusively that many were incorrect, and others unsustained by satisfactory evidence. Indeed, Dr. Morton had collected nearly all his examples from so great a distance that it was next to impossible either to verify or refute them. But "why," significantly asks Dr. Bachman, "carry us to Egypt, to the steppes of Tartary, to the island of Java, and the wilds of Paraguay and Yucatan, to ascertain the truth of the relations of Maga and De la Malle, the

Beyträge of Rudolphi, the rambles of Captain Stedman, or the interested collector who sent to Temminck his specimens of wild and tame cocks and curassoes? Our own country has been settled for more than two hundred years. We have imported all the domesticated animals and poultry of Europe, and several of their wild species exist in our forests. Our fauna is larger, and we possess every variety of latitude, from polar cold to tropical heat. How many hybrids have we found in the woods? We are under the impression that we possess two specimens of a hybrid between the grey rabbit and the swamp rabbit, but as no more of a similar kind were obtained, we presume they never propagated. We were, moreover, led to suppose, after carefully examining a pair in the Museum at Zurich, that the bird found at long intervals on the continent, which was described by Leisler under the name of *Tetrao intermedius*, might prove a cross between the wood grouse, (*Tetrao urogallus*,) and the black cock, (*Tetrao tetrix*,) owing to the fact that both species are very rare in many neighborhoods, and

that the individuals of each might associate together in the absence of their own species."* Subsequently, however, Dr. Bachman found that he had been mistaken in regarding the *Tetrao intermedius* as a hybrid. Temminck, an authority quoted by Dr. Morton himself, had proved it to be a true and pure species, and when this was pointed out to the latter by Dr. Bachman, he admitted the error he had been led into. Dr. Bachman also satisfied him that another of his supposed hybrids, that between *Motacilla lugubris* and *Motacilla alba*, was not a hybrid at all, but a true species described by Gould. Again, Dr. Morton had denied the statement of Dr. Bachman, that naturalists agree that *Capra aegagrus* was the origin of all our domesticated goats. He now admitted his mistake. "I stand corrected," he wrote, in May, 1850, "with regard to *Capra aegagrus*, which is by general consent admitted to be the source of the common goat." "These," remarks Dr. Bachman, "were admissions that ought to have cooled the ardor of even Dr.

* J. Bachman, D. D. Op. cit., p. 102.

Nott. Thus his facts continually diminished, until he had only the dog to lean upon, in support of his theory of fertile hybrids."* With reference to the dog tribe, he says: "The Wolf, the Jackal, and the Fox, all intermix with each other; so does the common Jackal with the Jackal of Senegal." "It is certain, therefore, that dissimilar species of the dog tribe are capable of producing a fertile hybrid offspring." Dr. Morton's principal authority for this statement was Col. Hamilton Smith, the author of the description of the mammalia in the Naturalist's Library. The zoölogical writings of this gentleman are very justly characterized by Dr. Bachman as displaying much reading and research, exhibiting the result of extensive travel, and desultory, but not minute and thoughtful, observation. He seldom gives authorities, and is so rapid that he cannot thoroughly verify his facts. He is fond of fanciful theories, which he holds pertinaciously, and supports by all manner of facts and reasoning. For abun-

* Ibid. Charleston Medical Journal and Review for September, 1854., p. 641.

dant proof of these statements we refer to his late work on the Natural History of the Human Species, in which he seems inclined, on the whole, to favor the doctrine of the unity of the species, but strange to say, finds his greatest difficulty in the way of fully adopting this conclusion, in the character of the ancient flat-head Indians of South America. But even Dr. Morton believed that they were of the same race with other tribes now in existence who disfigure the heads of their children in this manner.*

Col. Smith says: "*We are inclined* to believe there are sufficient data to doubt the opinion that the different races of domestic dogs are all sprung from one species, and still more that the Wolf was the sole parent in question; on the contrary, we are *inclined to lean*, for the present, to the *conjecture* that several species, ab origine, constructed with faculties to intermix, including the Wolf, the Buansu, the Anthus, the Dingo, and the Jackal, were the parents of domestic dogs. That even a dhole, or a thous

* Bachman, D. D. Unity of the Human Race, etc., p. 296.

may have been the progenitor of the greyhound races; and that a *lost* or *undiscovered species*, allied to *Canis tricolor* or *Hyaena venatica* of Burchell, was the source of the short-muzzled and strong-jawed races of primitive mastiffs." No reasons are stated for these gratuitous "*conjectures*," as the writer candidly characterizes them, at the same time that he says "*his mind is inclined to lean to them;*" and yet, on the strength of these bare "conjectures," Col. Smith is quoted by Dr. Morton as high authority for his dogmatic assertion that "dissimilar species of the dog tribe are capable of producing a fertile hybrid offspring." In view of so convincing a demonstration of the errors and fallacies of Dr. Morton's essays on this subject, we cannot withhold the expression of our surprise that "Dr. Nott's ardor" was not cooled. And yet so it was,—for in 1851, he writes in Debow's Review: "I have just received and read Dr. Morton's reply to Dr. Bachman's essay on the question of Hybridity as a Test of Species. It is the most perfect refutation I have ever seen, and it is to be hoped that no one will ever waste

time again in advocating the idea that prolificacy among races affords an evidence of common origin." He has, however, himself found it necessary to employ a portion of his own time in contributing an elaborate chapter on this subject in the "Types of Mankind," and more recently still, has continued the discussion in a note to the American editor of Gobineau's "Moral and Intellectual Diversity of Races," notwithstanding the alleged completely satisfactory settlement of the question which had resulted from Dr. Morton's last paper. We are not disposed to doubt that *his* time was wasted. The body of naturalists have not agreed with him, either as to the merit of Dr. Morton's paper, or as to the soundness of the doctrine which he advocated.

We are indebted to an intelligent naturalized citizen of the United States for the republication of the suggestive treatise by the Count A. de Gobineau, "On the Intellectual and Moral Diversity of Races," which he has enriched by an instructive analytical introduction, and to

which Dr. Nott has contributed an Appendix.* From a hasty perusal of this interesting treatise, we are disposed to unite in the commendation bestowed upon it by the American editors. The testimony of the author on the subject now under consideration, is to the following effect: "The observations of naturalists seem to have well established the fact that half-breeds can spring only from nearly allied species, and that even in that case they are condemned to sterility. It has been further observed, that even among closely allied species, where fecundation is possible, copulation is repugnant, and obtained generally either by force or ruse; which would lead us to suppose that, in a state of nature, the number of hybrids is even more limited than that obtained by the intervention of man. It has therefore been concluded, that among the specific characteristics we must place the faculty of producing prolific offspring."

* The Moral and Intellectual Diversity of Races. From the French of the Count A. de Gobineau; with an Analytical Introduction and copious Historical Notes. By H. Hotz. Philadelphia, 1856.

Such testimony compelled Dr. Nott to re-open the discussion. He assumes that Count Gobineau was not "posted up" on the subject of hybridity,—though, let it be remembered, he had previously asserted that Dr. Morton had so completely settled that question in 1850, as to make it a "waste of time" for any one to advocate the old doctrine again. Dr. Nott then takes occasion to expound and defend the doctrines of his school. "We contend," he writes, "that there is a regular gradation in the prolificness of the species, and that, according to the best lights we possess, there is a continued series from perfect sterility to perfect prolificacy. The degrees may be expressed in the following language :

"I. That in which hybrids never reproduce ; in other words, where the mixed progeny begins and ends with the first cross.

"II. That in which the hybrids are incapable of producing *inter se*, but multiply by union with the parent stock.

"III. That in which animals of unquestionably distinct species produce a progeny which

are prolific *inter se*, but have a tendency to run out.

"IV. That which takes place between closely *approximate species;* among mankind, for example, and among those domestic animals most essential to human wants and happiness; here the prolificacy is unlimited."*

About the first two propositions there is no dispute. We admit the correctness of the third, with this qualification, however, that the fertility is partial and temporary, rarely if ever extending through more than two generations, and consequently the "running out" is rapidly accomplished. The fourth proposition we wholly object to, and call for proof. It will scarcely be credited, that after so much boasting as characterizes the writings of Dr. Nott on this subject, he should find it necessary to resort to such a device as this, in order to establish his position. He argues, namely, that the specific diversity of the human races is established by the permanence of their types, and as these races are prolific *inter se*, therefore

* Op. cit. Appendix by Dr. Nott.

different species, provided they be "proximate," are prolific indefinitely. In other words, he begs the question as to the main point,—namely, the specific relations of the different races of men,—in order to settle an incidental and subordinate one, and then, with an extraordinary perversion of the simplest rules of logic, returns with the questionable data thus acquired, to fortify the position he had already unwarrantably assumed. Precisely the same objection applies, of course, to his only other example, that of the races of *Canis familiaris*. We have already seen that the most reliable zoölogists assert with confidence the specific unity of all these varieties, notwithstanding the evidence afforded by the Egyptian monuments in regard to the early origin of several of these varieties, evidence which was quite as well known to them as it is to Dr. Nott; and yet the latter, arbitrarily assuming their specific diversity, finds it easy enough, of course, to establish the unlimited fertility of such "proximate species" as these. Accordingly he triumphantly exclaims: "Now I say that man and the dog, to

say nothing of other examples, form that link of perfect prolificacy of two species which is called for. I would ask in all candor, what more perfect proof does the case admit of? We have pointed out a regular gradation in the laws of hybridity, and we then produce species that are perfectly prolific, and which, according to all the criteria by which species can be tested, are distinct." This last assertion is certainly cool, in view of the fact that nearly all the most eminent zoölogists of the age maintain the opposite doctrine.

We have dwelt at some length upon this topic, because of the strenuous efforts which are now making, under cover of Dr. Morton's name and reputation, to discredit conclusions which had been long accepted as axioms in Natural History. For yet further details we refer our readers to Dr. Bachman's writings on this subject in his monograph on the "Unity of the Human Race," and in his contributions to the Charleston Medical Journal and Review, from the year 1850 down to the present time. We are satisfied that the facts which he has

accumulated are sufficient to convince any unbiased mind that there is not the slightest ground for accepting the new doctrines so earnestly but so unsuccessfully advocated by Dr. Morton and his followers.*

Having dwelt at such length on this subject, we must content ourselves with stating merely

* The writer of a memoir of Dr. Morton, in "Types of Mankind," speaks of Dr. Bachman in terms of bitter contempt, alleging that he is more of a theological polemic than a naturalist, and averring that "he has his punishment in general condemnation and impaired scientific standing." We feel bound to say that we have seen nothing in the tone or expressions of Dr. Bachman's scientific papers to justify the discourteous epithets applied to him by the authors of "Types of Mankind;" and as to his rank as a naturalist which Dr. Morton's friend and biographer so directly depreciated, we need only take the testimony of Dr. Morton himself, who, addressing Dr. Bachman through the pages of the "Charleston Medical Journal and Review," for May, 1850, used the following language: "I fully reciprocate the kind sentiments you have expressed with respect to myself, for no difference of opinion can diminish my esteem for you as a man, or lessen my admiration for one *who, by common consent, stands in the front rank of American Zoölogy.*" Nor was this an exaggerated compliment, betokening the instinctive courtesy rather than indicating the deliberate judgment of the writer; for it will be admitted by every unprejudiced student of natural history to be only a just tribute to the learned and indefatigable author of the "Quadrupeds of North America." So far as the "scientific standing" of any one has been "impaired," as the result of the discussion on hybridity, it is certainly not that of Dr. Bachman. On the other hand, as sincere admirers of Dr. Morton, we rejoice that his title to a lasting reputation rests on better grounds than the loose and inaccurate statements and inconsequential reasonings of his essays on "Hybridity considered with Reference to the Unity of the Human Species."

the conclusions of Dr. Prichard, respecting other points of physiological conformity. The accuracy of these conclusions will not be questioned by any one who is conversant with the evidence on which they rest. "A certain uniformity of constitution, or a constant adherence, within a particular range of variety, to certain laws of the animal economy, belongs to the specific character of each original race. Particular species have certain limits with regard to the average duration of life, the circumstances connected with reproduction, such as the number of their progeny, the times and frequency of breeding, the period of gestation in mammifers, and in birds that of sitting upon eggs, and in the length of time during which they suckle or watch over their young. The progress of physical development and decay is likewise ordained by nature to take place in each species according to a certain rule. The periods at which individuals arrive at adult growth, the different changes which the constitution undergoes at particular ages, the periods of greatest vigor and of decline, and the total

duration of life, are given, though with individual exceptions and varieties, to every species of animals. There are exceptions and variations, but these are within certain prescribed limits and obey definite laws. On the other hand, it may be observed as a very general fact, that animals belonging to tribes which nearly resemble each other, but yet are specifically distinct, differ in a decided manner with respect to the same particulars."*

Yet another test of the specific relations of animals is furnished by their agreement or difference in psychological characteristics. Among the lower animals we find every species characterized by the possession of instincts and propensities peculiar to itself, and these instincts often differ remarkably in species presenting the closest structural alliance. On the other hand, in the several varieties of domesticated animals belonging to one and the same species, notwithstanding strongly marked diversities of physical structure, we may recognize instincts which are fundamentally the same, although

* J. C. Prichard. Op. cit., p. 65.

they may have been modified by the continued influence of man, and by the new circumstances in which the animals are placed.*

The principles which it has been our aim to set forth and illustrate in the foregoing remarks, and which are now generally recognized as among the axioms of Natural History, are drawn up by Dr. Carpenter in a series of formal propositions, an abridgment of which, with a few slight modifications, we will now present, as a summary recapitulation of the whole subject.

1. Two races can be regarded as *specifically distinct* only when the characters which separate them are transmitted with complete uniformity from parent to offspring; *when there are no intermediate gradations tending to connect them;* and when no such tendency to variation has manifested itself in either race, as shall make it probable, or, at any rate, possible, that their differences may be the direct result of external influences, or may be attributed to an unusual divergence in the character of the offspring from those of the parents.

* J. C. Prichard. Loc. cit; and Carpenter, "*Varieties of Mankind*

2. On the other hand, two races may undoubtedly be regarded as *specifically identical* when, however great the differences in stature, conformation, psychical character, etc., presented by their respective types, *these types are connected with each other by intermediate gradations so close as to render it impossible to establish a definite boundary line between the collections of individuals which are assembled around them.*

3. Again, two races may undoubtedly be regarded as *specifically identical*, when, in either race, varieties present themselves which exhibit the distinctive characters of the other race ; since we then have evidence that, although these peculiarities are so *generally* transmitted from parent to offspring, each race possesses a certain degree of permanence, yet they are not thus *uniformly* inherited ; and, consequently, there is nothing to prevent the transformation of the one race into the other, if the circumstances which have originated the variation, even in a single case, should act with sufficient potency on the whole mass.

4. No character can be safely adopted, as justifying the assumption of the specific diversity of two races, which has been found by experience to undergo considerable variation in either race, even though such modification should not proceed to the extent of conversion into the character of the other; for if a limited amount of change in external conditions be found capable of effecting a certain degree of alteration, the probability is strong that the higher difference may have had its origin in the more potent operation of the same class of causes.

5. The very fact of the extensive dispersion of a race, and of its existence under a great variety of external conditions, implies a marked capacity for variation; since, without such capacity, the race could not continue to flourish.

6. Among the domesticated races of quadrupeds, which are particularly susceptible of the influences tending to produce *permanent varieties*, the characters most susceptible of variation are *stature—general conformation of the body—conformation of the skull—quantity*,

*texture and color of the hairy covering—psychical character*, as shown in the increase of *intelligence*, in the acquirement of new methods of action, and in the disappearance of some of the natural *instinctive* propensities.

7. The several races of animals which, according to the foregoing criteria, are accounted as belonging to the same species, breed freely and spontaneously with each other, when allowed to do so; and the offspring are fertile, not only with either of the parent races, but with each other. On the other hand, although propagation *may* take place between individuals of undoubtedly distinct species, yet there is little spontaneous tendency to such admixture; for each animal will select one of its own species in preference to one of another species. The hybrid offspring are deficient in generative power; so that, although a mule may be fertile when paired with an individual of either of the parent races, it is seldom or never fertile with one of its own kind. Thus the peculiarities introduced by hybridity are speedily merged into those of the parent stocks; and *no new*

*race has ever been known to originate from this kind of union.*

8. Among all those races which are entitled to rank as permanent *varieties* only, the *physiological* conformity is often closer than the structural.

9. So, again, among the varieties of the same species, there is, with subordinate differences such as can usually be traced to external agencies and particularly to human influence, a very close *psychical* conformity; the capacities of the several races being fundamentally the same, although varying in their degree of relative development.*

* See Carpenter on the "Varieties of Mankind" for a somewhat fuller summary.

## CHAPTER III.

APPLICATION OF THE FOREGOING PRINCIPLES TO THE INVESTIGATION OF THE SPECIFIC RELATIONSHIPS OF THE RACES OF MEN.

We propose now to make an application of the general principles which have been enunciated in the preceding chapters, to the solution of the problem of the specific relationships of the races of mankind. In our remarks, designed to illustrate the general propositions, we have anticipated much that might otherwise be appropriately stated in this connection. A few words will, therefore, suffice for the present application, at least with respect to many of the several heads.

We remark, then, in the first place, that inasmuch as the records of profane history do not extend back to the origin of any of the leading divisions of the human family, we can

not, of course, expect a direct and authoritative solution of the question from that quarter. We might, indeed, consult the Mosaic narrative, and quote the incidental testimony of St. Paul, and this too without violating the principle announced in our first chapter, that the inquiry should be pursued as one of pure science, and not as a theological speculation. It is one thing to demand assent to a scientific proposition, on the ground that its denial involves a conflict with some theological dogma, and quite a different thing to admit certain historical facts on the testimony of the sacred writers. The claims of the Bible to be regarded as a genuine and authentic narrative, should be tested by the same canons which serve to authenticate any other history. If these claims be substantiated, we cannot see on what fair grounds its record of simple facts can be set aside in any inquiry in which these facts have a most important bearing. Men of science may reasonably object to the admission of theological doctrines, which rest upon particular modes of interpreting the simple facts; but

we repeat it, if the record be duly accredited, the facts are just as valid in matters of science as though they were reported in profane history, and this, too, even when we set aside altogether the fact of the inspiration of the sacred writers. Judging Moses simply by the extraordinary agreement of his cosmogony, when properly read in the light of modern hermeneutics, with the deductions of modern geology, in which respect it is in amazing contrast with the cosmogonies of all other ancient writers, we should be bound by the rules of the most positive philosophy to give due weight to such interesting facts, and to admit both the credibility and the authority of the sacred historian.* And yet, inasmuch as for reasons already stated we prefer, in general, to support the Scriptures by the results of scientific researches, to aiding science even in its narrative department by means of the sacred writings, we shall not insist upon making this very legitimate use of the facts there

* See a Review of the "Six Days of Creation," of Prof. Taylor Lewis, by Prof. Dana, in the Bibliotheca Sacra for Jan., 1846 p. 110.

recorded, though we have thought proper to state and defend the position which has just been indicated.

In this connection we are called upon to notice the indefatigable attempts of the authors of the "Types of Mankind," to persuade the reading public that reliable history has spoken unmistakably in favor of the views of the diversity-theory party. We refer to the use made by them of the fact, that the negro and three other leading types of men were accurately delineated on the monuments of Egypt several thousand years ago. But as we have already had occasion to remark, the famous "monumental history of man" throws no light at all upon the obscure question of the origin of the different leading human types. Whatever date be assigned to these inscriptions, there must have been an antecedent period quite long enough to have given origin to any number of types. We can easily imagine various explanations of the manner in which different types might have arisen in the period anterior to the date of the Egyptian monuments,

whether under the influence of natural causes, favorable to the development of an original constitutional tendency to spontaneous variation, or in virtue of a more direct and miraculous interposition of God in the case of the three sons of Noah, in accordance with a common interpretation of the curse of Canaan, and the blessing of Shem and Japheth, as recorded in Genesis ix.: 25–27. But we do not feel called upon to indulge in any speculation on this point. We hold, in accordance with the principles recognized by the best naturalists, as just cited at length, that the specific unity of permanent varieties may be established in numerous instances in which there is no historical record of the origin of the several variations.

It is, moreover, a significant fact, that while the oldest monumental records extend back, according to Birch and Lepsius, to about 3890 B. C., *no negro delineation*, as admitted by the authors of "Types of Mankind," (p. 259,) *is found earlier than the 24th century B. C.* Just here we are constrained to call attention to their apparently disingenuous way of recording this

fact. So far from adverting to the interval of more than a thousand years between the date of the oldest negro delineation and that of the earlier records, they speak of the former as "contemporary with the earliest Egyptians;" whereas it is seen that the monumental inscriptions, so far from demonstrating the contemporaneous origin of the black and white races, furnish a strong presumption against this doctrine. Accordingly BUNSEN and LEPSIUS, whom the authors of the "Types of Mankind" were constrained to accredit as the most eminent and reliable of living Egyptologists, are both earnest advocates of the specific unity and of the common origin of the human races; and yet, in the teeth of this fact, Nott and Gliddon complacently ascribe the same opinions as expressed by Prof. Owen, Count Gobineau, and others, to their ignorance of the "monumental history of man."

But, though it was not necessary for our general argument to demonstrate the origin within historic times of any of the leading types of mankind, we are not without evidence of the

appearance of new varieties within a comparatively recent period. The Hon. J. R. Poinsett made to Dr. Bachman the following statement; "I saw in the capital of Mexico a regiment of six hundred men, called Los Pintados, who were all spotted with blue spots in some part of the body. These people are found along the Pacific coast just north of Acapulco." "These persons were all in fine health, and propagated their varieties from generation to generation. What there was in the food, the climate, or the geological structure of the western coast of America to produce this strangely-colored variety in the human species we are unable even to conjecture. It was certainly not disease, as Mr. Poinsett represents them as a regiment of fine, healthy-looking men, in which there was not a solitary individual who was not spotted in this manner. If our opponents who are busily engaged in making new species of men, should, on this hint, begin to speculate on the position this new species of *Homo maculatus* should occupy in our nomenclature, we would just remind them that they have originated

since the discovery of America, inasmuch as they are a mixture of Spanish and Indian blood."*

Dr. Nott asserts, that "the genus Homo embraces many primordial types or species which have remained permanent and *untransitional* through all recorded time, and despite the most opposite moral and physical influences." But we have just seen that the argument intended to be expressed in the latter part of the sentence does not by any means sustain the assertion which prefaces it. For "all recorded time" does not cover the entire history of any one species, if we exclude, as this gentleman does exclude, all the writings of Moses. The alleged fact, if it were true,—and we have seen that, according to the statements of Lepsius and Birch, and by Dr. Nott's own admission, it is wholly without "monumental" proof as regards the negro race for at least one thousand years,—would only furnish a slight presumption in favor of his opinion: and this presumption would even then be easily set aside by numerous and convincing

* J. Bachman, D. D. On the Unity of the Human Race, etc., p. 182.

considerations. But in point of fact, the assertion that the types of men have remained "permanent and *untransitional* through all recorded time" is directly opposed to the statements of the most eminent ethnologists and travellers. Thus Dr. Carpenter states, as the result of the researches of Prichard, Latham, and others, that "the Magyar race in Hungary, which is not now inferior in mental or physical characters to any in Europe, is proved by historical and philological evidence to have been a branch of the great northern Asiatic stock, which was expelled about ten centuries since from the country it then inhabited (bordering on the Uralian mountains), and in its turn expelled Slavonian nations from the fertile parts of Hungary, which it has occupied ever since. Having thus exchanged their abode, in the most rigorous climate of the old continent—a wilderness in which the Ostiaks and Samoiedes pursue the chase during only the mildest season—for one in the south of Europe, amid fertile plains abounding in rich harvests, the Magyars gradually laid aside the rude and sav-

age habits which they are recorded to have brought with them, and adopted a more settled mode of life. In the course of a thousand years, their type of cranial conformation has been changed from the pyramidal (or Mongol) to the elliptical (or Caucasian); and they have become a handsome people, with fine stature and regular European features, with just enough of the Tartar cast of countenance, in some instances, to recall their origin to mind. Here it may be said that the intermixture of the conquering with the conquered race has had a great share in bringing about this change: but the Magyars pride themselves greatly on the purity of their descent; and the small infusion of Slavonic blood, which may have taken place from time to time, is by no means sufficient to account for the complete change of type which now manifests itself. The women of pure Magyar race are said by good judges to be singularly beautiful, far surpassing either German or Slavonian females. A similar modification, but less in degree, appears to have taken place among the Finnish tribes of Scandinavia. These

may be almost certainly affirmed to have had the same origin with the Lapps ; but whilst the latter retain (although inhabiting Europe) the nomadic habits of their Mongolian ancestors, the former have adopted a much more settled mode of life, and have made considerable advances in civilization. And thus we have in the Lapps, Finns, and Magyars, three nations or tribes, of whose descent from a common stock no reasonable doubt can be entertained, and which yet exhibit the most marked differences in cranial characters, and also in general conformation,—the Magyars being tall and well made, as the Lapps are short and uncouth."*

Hugh Miller, advocating the doctrine that the Caucasian type was the type of Adamic man, and that all the varieties of the species, in which we find humanity "fallen," according to the poet, "into disgrace," are varieties that have lapsed from the original Caucasian type, avers that "there are cases in which not more than from two to three centuries have been

* W. B. Carpenter. Op. cit., p. 1328; where also several other instances are cited.

found sufficient thoroughly to alter the original physiognomy of a race," and quotes a striking and well-known case in point: "On the plantation in Ulster, in 1611, and afterwards, on the success of the British against the rebels in 1641 and 1689," says a shrewd writer of the present day, himself an Irishman, "great multitudes of the native Irish were driven from Armagh and the south of Down, into the mountainous tract extending from the Barony of Fleurs eastward to the sea; on the other side of the kingdom the same race were exposed to the worst effects of hunger and ignorance, the two great brutalizers of the human race. The descendants of these exiles are now distinguished physically by great degradation. They are remarkable for open projecting mouths, with prominent teeth and exposed gums; and their advancing cheek-bones and depressed noses bear barbarism on their very front. In Sligo and Northern Mayo, the consequences of the two centuries of degradation and hardship exhibit themselves in the whole physical condition of the people, affecting not only the features

but the frame. Five feet two inches on an average — pot-bellied, bow-legged, abortively featured, their clothing a wisp of rags — these spectres of a people that were once well-grown, able-bodied, and comely, stalk abroad into the daylight of civilization, the annual apparition of Irish ugliness and Irish want."

Agassiz and Dr. Morton agree that all the aboriginal tribes of America, except only the Esquimaux, had a common origin, and yet the widest diversities are admitted to exist among them as to the capacity of the cranium, shape of the head, stature, color, and character of the hair. Dr. Morton himself bears very decided testimony on most of these points.* Catlin, speaking of the Mandans of the Upper Missouri, whose fairness of complexion is proverbial, says: "A stranger in the Mandan village is first struck with the different shades of complexion and various colors of hair which he sees in a crowd about him, and is at once almost disposed to exclaim that 'these are not

* S. G. Morton. "Physical Type of the American Indians"; in Schoolcraft's "Indian Tribes," vol. ii.

Indians.' There are a great many of these people whose complexions appear as light as half-breeds; and amongst the women particularly, there are many whose skins are almost white, with the most pleasing symmetry and proportion of features; with hazel, with grey, and with blue eyes—with mildness and sweetness of expression, and excessive modesty of demeanor, which renders them exceedingly pleasing and beautiful." Their "hair is generally as fine and as soft as silk." "There are very many," however, "of both sexes and of every age, with hair of a bright silvery grey." "I have ascertained that this strange phenomenon is not the result of disease; but that it is unquestionably a hereditary character which runs in families, and indicates no inequality in disposition or intellect." *

The same phenomenon of a gradational series, exhibited under such circumstances as to demonstrate the *transitional* character of the features usually regarded as typical, is strikingly exemplified in the case of the African tribes.

* Catlin's North American Indians. Vol. I., p 94.

These are very generally admitted to have sprung from a common stock. Thus the Chevalier LEPSIUS, in a letter to Dr. Nott (Types of Mankind, p. 233), uses the following language:

"You speak of a gradation of the African tribes from the Cape to the northern portion of the Continent. It is a curious fact, that the languages of the Hottentots and of the Bosjemans are essentially different from those of all the rest of the continent up to the equator. And what is, perhaps, still more curious, their language bears certain characteristic traits which elsewhere are only found in the languages of *North-Eastern* Africa. In my opinion, the *whole continent had, at a certain epoch, a parent population, and consequently analogous tongues.* At a later period Asiatic tribes immigrated on the side of the North-East. The mixture of races gave rise to the numerous tribes and to the scattered and apparently incoherent languages which are now found in the broad belt between the line and the fifteenth degree of north latitude. These languages have lost their African charac-

ter without acquiring that of Asia ; but the basis of the languages and of the blood is African."

According to Dr. SHAW, as quoted by PRICHARD,* while "the Kabyles in general are of a swarthy color, with dark hair, those who inhabit the mountains of Auress, or Mons Aurarius, though they speak the same language, are of a fair and ruddy complexion, and their hair is of a deep yellow." Dr. Prichard appends this comment: "Writers who labor under the prejudice which regards all physical characters as permanent, adopt the supposition, *perfectly groundless as it is*, that the xanthous Berbers of Mount Auress are the remains of the Vandals who were conquered by Belisarius. The Tuaryk are in some parts white, in others black, but without the features of negroes."

The Berberines, or Nubians of the Nile, appear to be the descendants of the Nobatæ, who were brought fifteen centuries ago from an oasis in the Western country by Diocletian, to inhabit the valley of the Nile. They are one of those races whose complexion is a mixture

* J. C. Prichard. Op. cit., p. 271.

of red and black, and whose physical characters bear some analogy to those of the Egyptians. They are, however, much darker in color than were that nation, though the shade of both varied. BROWN, a most accurate writer, describes the people in the Island of Elephantine as black, but, in the opposite Assouan, of a red color, with the features of Nubians. Dr. Rüppell thus describes their physiognomy: "A long oval countenance; a beautifully curved nose, somewhat rounded towards the tip; lips rather thick, but not protruding excessively; a retreating chin; scanty beard; lively eyes; strongly frizzled but never woolly hair; a remarkably beautiful figure, generally of middle size, and a bronze color, are the characteristics of the genuine Dongolawi." The most interesting fact connected with this race is, that they appear, if we may place reliance on historical evidence, to furnish *an instance of the transition from the physical character of the negro to one very similar to that of the ancient Egyptians.**

* J. C. Prichard. Op. cit., pp. 273–275. See also "Researches into

The proof of this last statement is given by Dr. Prichard, in his Physical History of Man, and is entirely satisfactory. "Has the change which has taken place," he asks, "in the physical character of the Nubian race arisen from an abode during so many ages in a climate different from that of their native wilderness, aided by the modifying influence of civilization and the habits of a settled and agricultural life, or is it to be ascribed to intermixture of race? Those who are fully persuaded to regard all the varieties of physical structure which distinguish human races as permanent characters, will immediately decide in favor of the latter alternative; but if we regard that point as still undetermined, and form our opinion from the circumstances and probabilities of the particular case in question, we shall adopt, unless I am mistaken, a different inference. It may be observed, in relation to this inquiry, that it is not easy to conceive how the abode of Arab hordes in *different parts* of Nubia could produce a

the Physical History of Man," by the same Author, Vol. ii., pp. 172–183, for an analysis of the evidence relating to the history and ethnography of this people.

*general* modification in the physical character of the *whole* Barabra race. Occasional intermarriages have doubtless taken place, and the result has been manifest in individuals; but these incidental crossings of breed could hardly modify the whole nation. It is known that the impression of one such mixture is lost in a few generations. In order that the blending of families belonging to different stocks may produce a third tribe of intermediate character, it is requisite that the two parent races should be mixed in nearly equal proportions; since when a few families of one stock are from time to time blended with a large population belonging to another, the impression is speedily effaced, and the offspring becomes assimilated to the greater number. Hence, intermixtures of whole nations or of considerable numbers or masses can hardly take place in such a way as to give rise to a uniform intermediate stock. The result is always that in one locality one physical character, and in another a different type, predominates. It is perhaps for this reason more probable that the uniform and gen-

eral change of physical character which the Nubian nation has undergone since their removal from Kordofan to the Nile has arisen from a different cause; and this supposition seems to be confirmed by all that we can learn respecting the past and present circumstances and relations of the two races of people who are supposed to have become intermixed. According to Burckhardt, Nubia was conquered or overrun, after the reduction of Egypt, by several Arab tribes, among whom the principal were the Djowabere and El Gharbye, who for some centuries waged continued warfare with each other. In the meantime the Barabra, as we learn from many authorities, remained a separate people, and maintained the Christian religion, to which they had been converted in the sixth century.* Salim El Assouany,

* See Gibbon, Decline and Fall. Chap. xlvii.—After adverting to the relapse of the Nubians into paganism, and their subsequent adoption of Mohammedanism, preferring its triumphs to the degradation of the cross, Gibbon asserts, on the authority of Buffon, that they are pure Negroes, as black as those of Senegal, with flat noses, thick lips and woolly hair. Such physical characters doubtless belonged to them originally, but it is needless to add that Buffon's assertions are entitled to no weight in opposition to the testimony of Rüppell (who resided long among the Barabra) respecting the actual character-

whose description of Nubia and Ethiopia is largely cited by MACRIZI, says that the Nubians of his day were Jacobite Christians, and he declares them to be a people of superior intelligence to the neighboring nations. Salamoum, king of Dongola, according to the information collected by Burckhardt, was a powerful Christian prince at the end of the thirteenth century. Ibn Batuta, who travelled in their country, found the Nubians a Christian people, about the middle of the fourteenth century. The present inhabitants are Moslemin, and they pretend, like other Mohammedan nations, to be of Arabian origin ; but Macrizi says, that the greater number of genealogists state them to be descendants of Ham, by which it was meant that they were a genuine African people. It would seem that in former times a total difference in religion and manners must

istics of this people. The description given of them by modern travellers leaves no room for doubt. Accordingly, it is now universally conceded that they are no longer Negroes, the change being ascribed by some, as we have seen, to intermixture of races; while Nott and Gliddon, driven by the necessities of their system, gratuitously assert that they never were Negroes, and that the present type is aboriginal. See Types of Mankind, p. 199.

have prevented the Barabra and their Arab conquerors from becoming mixed. In modern times we are assured that the two races remain quite distinct, and that intermarriages between the Arabs and Berberins are very rare occurrences. This is the testimony of Dr. Rüppell, whose information is to be depended upon. The habits of the two races are totally different. The Barabra are husbandmen, who live together in small villages on the banks of the Nile, and occupy themselves in tilling the land. The free Arabs hold them in contempt, and think it beneath them to speak the language of the Barabras."*

We have thought proper to quote at some length the arguments of the learned and cautious Prichard, relating to the origin of the Barabra and their subsequent change of type, as a specimen of his method of thorough investigation, but inasmuch as our limits will not permit us to follow him in his detailed survey of the other African tribes, we avail ourselves

* J. C. Prichard. Physical History of Mankind. London, 1851. Vol. ii., pp. 181, 183.

of an admirable summary of results, which we find in an able article of the Southern Quarterly Review, for January, 1855. Making a rapid circuit of the vast African continent, and under the guidance of reliable travellers whose authority cannot be questioned glancing at its multitudinous tribes, the writer shows that "in the whole range we discover the same endless variations and gradational blendings between the widest extremes, exhibited by all the other people of the earth. In *color*, they vary through every shade, between the appropriate European that sometimes appeared in Egypt, and still exists in the neighborhood of Mount Atlas, and the polished ebony of the thoroughly dyed negro. In *physiognomy*, they range between the elegant Grecian outline, and the exaggerated monstrosity of prognathous development. In texture of *hair*, they exhibit every grade, from the soft Asiatic and even auburn locks of some Egyptians and of the Auranian Berbers, through the long and plaited ringlets of the Morooran Kaffirs, the short and crisp curls of the Nubian Berberines, the thick and

frizzled half wolf-like covering of the diffused Gallas, and the still more woolly-head growth of the sagacious Fellahs, to the thoroughly developed negro tufts of the Guinea tribes. In every important particular that marks varieties of men, the inhabitants of Africa vary with such indefinite blendings of one grade into another, between the Caucasian standard and the lowest negro specimen, that it is impossible to draw a line of division at any point of the skull, and affirm, here one type ends and another begins."*

Baron Humboldt (who, by the way, is quite as well acquainted with the monumental history of man as Dr. Nott can be) says: "Whilst attention was exclusively directed to the extremes of color and of form, the result of the first vivid impressions, derived from the senses, was a tendency to view these differences as characteristics, not of mere varieties, but of originally distinct species. The permanence of certain types, in the midst of the most opposite influences, especially of climate, appeared to favor

* Southern Quarterly Review, January, 1855 p. 148.

this view, notwithstanding the shortness of the time to which the historical evidence applied; but, in my opinion, more powerful reasons lend their weight to the other side of the question, and corroborate the unity of the human race. I refer to the *many intermediate gradations of the tint of the skin, and the form of the skull*, which have been made known to us by the rapid progress of geographical sciences in modern times; to the analogies derived from the history of varieties in animals, both domesticated and wild; and to the positive observations collected respecting the limits of fertility in hybrids. The greater part of the supposed contrasts to which so much weight was formerly assigned, have disappeared before the laborious investigations of Tiedemann on the brain of negroes and of Europeans, and the anatomical researches of Vrolik and Weber on the form of the pelvis. When we take a general view of the dark-colored African nations, on which the work of Prichard has thrown so much light, and when we compare them with the natives of the Australian Islands, and with the Papuans

and Alfourans, we see that a black tint of skin, woolly hair, and negro features, are by no means invariably associated." "Mankind are therefore distributed in varieties, which we are often accustomed to designate by the somewhat vague appellation of races."*

Such being the unanimous testimony of travellers with respect to the actual diversities, in almost every conceivable shade of gradation, among tribes admitted to have sprung from a common stock, is it not surprising that even the prejudiced authors of the "Types of Mankind," should hazard the assertion that the types of men are untransitional!† In point of fact, the

* Humboldt's Cosmos, Sabine's translation, Vol. i., p. 351. Having argued convincingly in favor of the specific unity of men, this illustrious philosopher adds the following reflection: "By maintaining the unity of the human species, we at the same time repel the cheerless assumption of superior and inferior races of men." This passage is quoted in the "Types of Mankind," with such comments as to imply that the tender sensibility of the amiable savant in view of the cheerlessness of the diversity doctrine was the main or only cause of his rejection of it, wholly ignoring the positive statements which we have, in part, quoted, and which immediately preceded the sentence in question.

† We do not overlook the fact that Dr. Nott, in asserting that human types are "untransitional," has reference exclusively to the question of changes actually taking place in any given type. He, of course, cannot deny that these types closely approximate in a grada-

shades of difference are so numerous, and they run into each other by such gradational changes, that it is utterly impossible to agree upon the number of distinct varieties. No two ethnologists make the same classification. Now this fact strikes us as furnishing a satisfactory refutation of the views so confidently promulgated by the new school of American ethnologists. If anatomy, zoology, the laws which regulate the geographical distribution of animals and the monumental literature of Egypt, prove, the existence of numerous primeval types of men, of course they indicate the exact number, since they do not announce an abstract proposition, but teach by actual examples. But is there even an approximation to accordance among the leading advocates of the doctrine of a plurality of species or of origin among the various races of

tional series, but he would contend that this fact is not inconsistent with the fixedness of each element of the series. It is our aim to vindicate the recognized principles of Natural History, by showing that this recently asserted doctrine leads to a manifest absurdity. For, as Prichard well says, "all the diversities which exist are *variable*, and pass into each other by *insensible* gradations; and there is, moreover, scarcely any instance in which the *actual transition cannot be proved to have taken place.*—Natural History of Man. 1843. P. 473.

men? Agassiz makes eight primeval types, and in so doing, involves himself, as we shall see in the sequel, in numerous difficulties and some absurdities. Dr. Morton made five groups, each subdivided into numerous families, twenty-two in all, without distinctly affirming which were distinct species. Dr. Nott, alluding to this classification, says, apologetically : " Some classification of races, however arbitrary, seems to be almost indispensable for the purpose of conveying clear ideas to the general reader, yet the one here adopted by Morton, if accepted without proper allowance, is calculated to lead to grave error. He has grouped together races which between themselves possess no affinity whatever, *that present the most opposite cranial characters*, and which are, doubtless, specifically different."

Jaquinot, quoted by Dr. Nott, makes three species only, of the genus Homo, the Caucasian, Mongol, and Negro. Dr. Nott is disposed to adopt this provisionally, as being simple, but adds that Jaquinot, being ignorant of the monumental history of man, classes together races

which (although somewhat similar in type, having presented distinct physical characteristics for more than three thousand years,) cannot be regarded as one of the same species, any more than his Caucasians and Negroes."

But besides the evidence of the transitional nature of human types exhibited in the gradational series of such types, the same fact is indicated by the want of constancy among individuals of the same tribe, in the characters alleged to be typical. While we admit, to a certain extent, the permanency of types, so that as a general rule,—to which, however, there are, as we have seen, some notable exceptions,—the races are not in danger of losing their typical characters, we yet contend that not one of these characters nor any particular combination of them, has that degree of constancy which is essential to render them valid as tests of specific distinction. Those who deny the specific unity of man, sometimes challenge the advocates of the doctrine to point out a single instance in which an individual belonging by birth to a particular race, has manifested the aggregate of the char-

acters held to be typical of another race. It would, indeed, be next to a miracle if such a phenomenon were to occur. On the mere principle of probabilities, the chances of the spontaneous recurrence of so complex a combination of characters, *where there was no hereditary tendency to their production*, would be almost infinitely small. It suffices to show that in the limits of one and the same race there are occasional deviations from every one of its typical characters, and of course from any particular combination of them, to discredit each and all as grounds of specific distinction."*

Dr. Carpenter, in his able article on the "Varieties of Mankind," in the English "Cyclopædia of Anatomy and Physiology," gives figures of skulls of Englishmen, preserved in the Museum of the Royal College of Surgeons,

* It should be borne in mind that after the possible variations from a given primordial organic form shall have been realized, and shall have given rise to subordinate groups of definite characters, the latter are not necessarily mutually convertible, though originally derived from a common type. The very fact of the acquisition of a certain set of characters may, and doubtless often does, operate as a bar to any other kind of variation, and consequently to the mutual conversion of many mere varieties of the same species.

some of which present the characteristics of the pyramidal or Mongol type, and others those of the prognathous or Negro type. Any man may recognize similar deviations, in any large and mixed crowd of persons, all of whom may be of pure Caucasian blood.

Again, Dr. Morton compared the capacity of the cranium in a number of skulls belonging to different races, and while the *average* capacity of the elliptical skull of the white races was greatest, and that of the Hottentot and Australian the smallest, yet the largest Negro skull was very much larger than the smallest European, and *even possessed two cubic inches more capacity than the largest Anglo-American.* It was a singular result, that the family exhibiting the largest skull,—namely, the Germans,—also exhibited one, its minimum, which approached very nearly to being the smallest of all that were examined in any of the families. Conversely, the Peruvians, whose minimum and average were the lowest, also rose in some instances very nearly to the maximum. It is quite evident, therefore, that there is no approach to

that constancy in the dimensions of the cranial cavity which is requisite to constitute this a valid test of specific distinction.

We shall be constrained to come to the same conclusion in regard to every other structural character which has yet been invoked, such as Dr. Neill's mark of a division of the articulating surface of each occipital condyle into two facets, by either a groove or a ridge, it being found by him in *thirty* only out of *eighty-one* African crania, while it was also found in four pure *Egyptian*, and in three aboriginal American skulls.*

The hue of the skin has, perhaps, a better apparent claim to be regarded as a fixed and permanent mark than any which has been yet referred to, but even this character has not that degree of constancy which is requisite for a specific distinction. For, as we have already seen in another connection, American Indians, admitted by all to have sprung from the same stock, exhibit every shade of color from "the almost *black* Charruas, on the southern shores

* American Journal of the Medical Sciences. Jan, 1850.

of the Rio de la Plata, and some of the California tribes,"* to the fair Mandans of Upper Missouri, represented by Catlin as being almost white. The same phenomenon is exhibited among the African tribes, as has been already stated, and occasional instances occur as individual anomalies in which Negroes become white after birth, not by a mere loss of the black coloring matter, but "by a positive development of the coloring matter that characterizes the *Xanthous* variety, in which the complexion is fair and ruddy." The fact that dark-skinned people do not lose their characteristic hue by living for many successive generations in temperate climates, is not at all inconsistent with the supposition that this hue might have been originally acquired as the effect of climatic or other external conditions. For a positive mark once acquired is apt to be perpetuated by hereditary transmission, and is, therefore, not lost by the mere withdrawal of the influences under which it was originally formed.

* Schoolcraft. Indian Tribes, part ii., p. 320. "On the Physical Type of the American Indians," an article written by Dr. Morton himself.

For a fuller statement of the argument under this head, we beg our readers to consult the works of Dr. Prichard, and Dr. Carpenter's article in the Cyclopædia of Anatomy and Physiology ; since the force of the argument depends upon the number of well authenticated observations relating to the inconstancy of this mark. The numerous pertinent facts cited by Dr. Carpenter suffice to demand our assent to his statement that, "on the whole, then, it must be concluded that the color of the skin is a character of such variable nature, that no positive line of demarcation can be drawn by its aid between the different races of mankind."

There is still less constancy in the differential characters of the hair in the different races, so vauntingly paraded a few years ago before almost every scientific association in America, by Mr. P. A. Browne, of Philadelphia, who asserted that the form of the surface left by a transverse section of the hair of a white man is *oval*, that of the Choctaw and some other American Indians, circular, the hair being cylindrical, and that of the Negro eccentrically elliptical, his

hair being quite flat. Again, he avers that the hair of the Negro is not true hair, but wool. Now Dr. Carpenter, who stands accredited before the scientific world as a most skillful and reliable practical microscopist, having employed a large portion of his time for the last twelve or fifteen years in the use of the microscope, as applied to the study of human and comparative anatomy, declares with emphasis that the form of the shaft of the hair varies not only in different individuals of the same race, but also in different hairs of the same individuals, being sometimes cylindrical, sometimes oval, and sometimes (though more rarely) eccentrically elliptical or nearly flat.* And so, too, for the other characters referred to by Mr. Browne.

We have thus shown that none of the alleged

* Similar statements to those of Dr. Carpenter are made by Dr. Henry Goadby, formerly Dissector of minute Anatomy to the Royal College of Surgeons, of England, whose skill in the preparation and mounting of objects for microscopic examination is proverbial both in England and in this his adopted country. (Text-book of Vegetable and Animal Physiology. By Henry Goadby, Professor of Vegetable and Animal Physiology, &c., in the State Agricultural Society of Michigan, &c., &c. New York, 1858. P. 82.)

The observations of my friend Dr. Julius Porcher, of South Carolina, made in 1854, and recently communicated to me by letter, establish the same conclusions.

differential characters exhibit that constancy which is requisite to their validity as tests of specific diversity, but that, on the contrary, their liability to occasional modifications within the limits of one and the same race, as well as their gradational changes in a series of races, the extremes of which may be very widely separated from each other, go far to demonstrate the specific unity of all.

Especially will this appear if we contrast this demonstrated inconstancy of the typical characters of the human races with the unvarying constancy of those traits which separate all the varieties of mankind, on the one hand, from the highest anthropoid brute on the other. This has been well done by Professor Richard Owen, the most philosophical of the comparative anatomists of the age, in his admirable lecture on the Anthropoid Apes, delivered before the Ethnological section of the British Scientific Association, an abstract of which is found in the London *Athenæum* for September, 1854. "It is not without interest," said the lecturer, "to observe that, as the generic forms of the Quad-

rumana approach the Bimanous order, they are represented by fewer species. The Gibbons (Hylobates) scarcely number more than half a dozen species; the Orangs (Pithecus) have but two species, or at most three; the Chimpanzees (Troglodytes) are represented by two species. The *unity of the human species is demonstrated by the constancy of those osteological and dental characters to which the attention is more particularly directed in the investigation of the corresponding characters of the higher quadrumana. Man is the sole species of his genus*—the sole representative of his order."

Our remarks on the value of structural peculiarities in the discrimination of species have covered so much space, that but little room is left for a notice of the physiological and psychological conformities prevailing among the races of mankind. This part of the inquiry has been pursued with great diligence and success by Dr. Prichard and Dr. Carpenter, whose conclusions only, as to most of the points noticed, we can now quote. These authors have collected authentic statistics, which serve to establish a

most exact correspondence between the different races, as to the average duration of life under the same conditions of climate, mode of life, etc.; as to the maximum longevity — the rate of mortality — the age at which the body attains its maximum development — the epoch of the first menstruation (with a partial and easily explained exception in the case of the Hindoo females)—the frequency of the periodical recurrence of that function — the epoch of life to which it extends — the duration of pregnancy — the fertility of mixed breeds — and finally, their liability to the same diseases. So wonderful a correspondence through so extensive a range of physiological susceptibilities and powers, covering, as it does, the whole physical nature of man, proves conclusively the specific unity of his varied types, while a similar comparison of even the lowest type of man with the highest anthropoid apes establishes beyond all question a marked difference of specific nature. Prof. Müller, of Berlin, the first, perhaps, of living physiologists, has well said: "From a physiological point of view, we may

speak of varieties of men, no longer of races. Man is a species, created once, and divided into none of its varieties by specific distinctions. In fact the common origin of the Negro and the Greek admits not of rational doubt." *

Professor Draper, of the University of New York, the author of a most original and valuable treatise on Human Physiology, comes to the same conclusion, which he announces with equal emphasis. "I do not, therefore," says he, "contemplate the human race as consisting of varieties, much less of distinct species, but rather as offering numberless representations of the different forms which an ideal type can be made to assume under exposure to different conditions." And again he says: "If we admit that the same original germ may develop itself into countless forms, according as it has been exposed to different physical agents, much more is it probable that the various races composing the human family, exposed as they have been to different physical circumstances, may by degrees have assumed the discordant features they present,

* See appendix C. for most interesting details.

although they have descended from one original stock." * He explains, too, in an exceedingly plausible hypothesis, the origin of the differences in the color of the skin and shape of the head, which distinguish many of the human races.

The force of the argument based on physiological unity is felt to be so great, that an attempt has been made by those who deny the unity of the races to discredit some of the facts on which it rests. Apparently not quite satisfied with the results of their efforts to invalidate the fertility of mixed breeds, as a test of the specific unity of the parent races, they now shift their ground, and deny that mixed human breeds are indefinitely prolific. They now assert that the mulatto is a mule, and that this hybrid breed will soon die out, unless replenished by the union of whites and blacks. Dr. Nott contends that when

* Human Physiology, Statical and Dynamical, by J. W. Draper. New York. 1856.

We must, however, qualify our assent to this writer's doctrine of the capacity of "the same original germ to develop itself into countless forms." We have already shown that there are limits of variation, and that with this apparent exception species are not only permanent but immutable.

the species are "proximate," that is, as closely allied as is possible, consistently with the diversity of origin, "prolificacy is unlimited," but he denies that whites and blacks are "proximate" species, and holds that their offspring must become extinct in a few generations, by breeding *inter se*. In an essay on Hybridity, published in 1842, he maintained the following propositions:

"1. That mulattoes are the shortest-lived of any class of the human race.

"2. That mulattoes are intermediate in intelligence between the blacks and whites.

"3. That they are less capable of undergoing fatigue and hardships than blacks and whites.

"4. That the mulatto women are particularly delicate, and subject to a variety of chronic diseases. That they are bad breeders, bad nurses, liable to abortions, and that their children generally die young.

"5. That when mulattoes intermarry, they are less prolific than when crossed on the parent stocks.

"6. That when a negro man married a white

woman, the offspring partook more largely of the negro type, than when the reverse connection had effect.

" 7. That mulattoes, like negroes, although unacclimated, enjoy extraordinary exemption from yellow fever, when brought to Charleston, Savannah, Mobile, or New Orleans."

In the chapter on Hybridity, in the " Types of Mankind," published twelve years later, Dr. Nott quotes these statements of his earlier writings on the subject, and adds the following commentary : " Almost fifty years of residence among the white and black races, spread in nearly equal proportions through South Carolina and Alabama, and twenty-five years' incessant professional intercourse with both, have satisfied me of the absolute truth of the preceding deductions. My observations, however, during the last few years, at Mobile and New Orleans, where the population differs essentially from that of the Northern Atlantic States, have induced some modification of my former opinions, although still holding to their accuracy so far as they apply to the intermixture of the

strictly *white* race (that is, the Anglo-Saxon or Teuton) with the true *negro*. I stated in an article printed in 'Debow's Commercial Review,' that I had latterly seen reason to credit the existence of certain *affinities* and *repulsions*' among various races of men, which caused their blood to mingle more or less perfectly ; and that in Mobile, New Orleans, and Pensacola, *I had witnessed many examples of great longevity among mulattoes ; and sundry instances where their intermarriages* (*contrary to my antecedent experiences in South Carolina*) *were attended with manifest prolificacy*. Seeking for the reason of this positive, and, at first thought, unaccountable difference between mulattoes of the Atlantic and those of the Gulf States, observation led me to a *rationale*, namely, that it arose from the diversity of *type* in the 'Caucasian' races of the two sections. In the Atlantic states, the population is Teutonic and Celtic ; whereas, in our Gulf cities, there exists a preponderance of the blood of the French, Spanish, Portuguese, and other *dark*-skinned races. The reason is simple to the historian. Our States along the Gulf of

Mexico were chiefly colonized by emigrants from Southern Europe. Such European colonists belonged to types genealogically distinct from those white-skinned 'Pilgrim Fathers,' who landed north of Florida. Thus Spain, when her traditions begin, was populated principally by Iberians. France received a considerable infusion of the same blood, now almost pure in her Basque provinces. Italy's origins are questions in dispute; but the Italians are a dark-skinned race. Such races, blended in America with the imported negro, generally give birth to a hardier, and, therefore, more prolific stock than white races, such as the Anglo-Saxon produce by intercourse with negresses. Bodichon, in his curious work on Algeria, maintains that this Iberian, or Basque population, although, of course, not negro, is really an African, and probably a Berber family, which migrated across the Straits of Gibraltar some 2,000 years before the Christian era; and we might, therefore, regard them as what Dr. Morton calls a proximate race."*

* Types of Mankind, p. 373.

Thus, though Dr. Nott candidly admits that he has of late witnessed many examples of great longevity among mulattoes, and sundry instances where their marriages were attended with manifest fertility, it does not in the least shake his confidence in his hastily adopted opinions,—but he finds a triumphant solution of the difficulty in his doctrine of organic repulsions and affinities. If it were necessary to consider such a theory with any seriousness, we should object to the manifold assumptions and to the obvious contradictions involved in the present application of it. We need scarcely say, that the assumption of any large admixture of Iberian blood among the present population of the Gulf cities is a most gratuitous hypothesis, and that the same may be said of the allegation, on the simple authority of a surgeon in the French army, that the Iberian population is "really African," in opposition to the opinions of Arndt and Rask, distinguished Scandinavian ethnologists, that the Euskarians of the Biscayan provinces, with the Lapps and Finns of Scandinavia, are remnants of an abo-

riginal *Turanian* population once, probably, occupying all Europe, but separated into two great divisions by the advance of the Indo-European tribes from the south-east corner into Central Europe.*

But let us hear the testimony of Dr. Bachman respecting the facts as he has observed them even in the Atlantic States. "Thus far," says he, after a residence of fifty years in Charleston, "we have found them (mulattoes) equally, if not more prolific, than the whites. We have, according to the last census, 405,751 mulattoes in the United States. The experiment, therefore, for good or for evil, has been conducted on a large scale. We have in Charleston a large number of respectable families of free mulattoes. They have received good English educations, and some of their daughters have even been taught drawing and music. Their sons are mechanics. Many of the members of this community of mulattoes are upright

* W. B. Carpenter. Op. cit. p. 1849.

A principal contributor to Nott & Gliddon's "Indigenous Races of the Earth," M. Alfred Maury, comes to the same conclusion respecting the Tartar affinities of the Iberian people. See Appendix G, p.

and virtuous, and are professors of religion. *They have intermarried for several generations. We have ascertained that they continue to be, through every generation, on an average, fully as prolific as either the whites or blacks.*"*

Let us now consider the argument founded

* Charleston Medical Journal, July, 1855, p. 524. Prof. DANA, in his "Thoughts on Species," from which we have already cited extracts, makes some very striking remarks on the subject of hybridity. Adverting to the great precision with which the purity of species has been guarded, he pertinently remarks: "It strikes us naturally with wonder, that even in senseless plants, without the emotional repugnance of instinct, and with reproductive organs that are all outside, the free winds being often the means of transmission, there should be a rigid law sustained against intermixture. The supposed cases of perpetuated fertile hybridity are so exceedingly few as almost to condemn themselves, as no true examples of an abnormity so abhorrent to the system. They violate a principle so essential to the integrity of the plant-kingdom, and so opposed to Nature's whole plan, that we rightly demand long and careful study before admitting the exceptions." . . .

"Again, in the animal kingdom, there is the same aversion in nature to intermixture, and it is emotional as well as physical. The supposed cases of fertile hybridity are fewer than among plants." . . .

"It is fair to make the *supposition* that, in case of a very close proximity of species, there might be a degree of fertile hybridity allowed: and that a closer and closer affinity *might* give a longer and longer range of fertility." But "*this hypothesis seems to be cut short*" *by such cases as that of the horse and the ass.* "*The short run of hybridity between these very closely related species, reaching its end in one single generation, instead of favoring the idea that perpetuated fortile hybridity is possible, is a speaking protest against a principle that would ruin the system if allowed free scope.* Moreover, it is not reasonable to attribute such indefiniteness to nature's outlines; for it is at variance with the spirit of her system.

"Were such a case demonstrated by well-established facts, it would

on a comparison of the different races of men with respect to mental endowments. It has already been briefly stated, that among the lower animals every species is characterized by the possession of instincts and propensities peculiar to itself. So that in the several *varieties* of one and the same species, notwithstanding strongly

necessarily be admitted; and we would add, that investigations directed to this point are the most important that modern science can undertake. But until proved by arguments better than those drawn from domesticated animals, we may plead the general principle against the *possibilities* on the other side. If there is a law to be discovered, it is a wide and comprehensive law, for such are all nature's principles. Nature will teach it, not in one corner of her system only, but more or less in every part. We have therefore a right to ask for well-defined facts, taken from the study of successive generations of the interbreeding of species *known* to be distinct. Least of all should we expect that a law, which is so rigid among plants and the lower animals, should have its main exceptions in the highest class of the animal kingdom, and its most extravagant violations in the genus Homo; for if there are more than one species of man, they have become in the main indefinite by intermixture. . . . . "Man, by receiving a plastic body, in accordance with a law that species most capable of domestication should necessarily be most pliant, was fitted to take the whole earth as his dominion, and to live under every zone. And surely it would have been a very clumsy method of accomplishing the same result, to have made him of many species, all admitting of indefinite, or nearly indefinite hybridization in direct opposition to a grand principle elsewhere recognized in the organic kingdoms. It would have been using a process that produces impotence or nothing among animals for the perpetuation and progress of the human race."

"There are other ways of accounting for the limited productiveness of the mulatto, without appealing to a distinction of species. There are

marked diversities of physical structure, we may recognize instincts which are *fundamentally* the same, although they may have been *modified* in their manifestations by the new circumstances in which the animals are placed. Take for example the case of the dog, every known variety of which species is remarkable for susceptibility of attachment to man, contrasting in this respect with the most nearly allied species of the same genus,—the wolf, the fox and the jackal. It is unnecessary to refer to the kinds and extent of modification which may be manifested by the different breeds of dogs in respect to this fundamental instinct of the entire species,

causes, independent of mixture, which are making the Indian to melt away before the white man, the Sandwich Islander and all savage people to sink into the ground before the power and energy of higher intelligence. They disappear like plants beneath those of stronger root and growth, being depressed morally, intellectually, and physically, contaminated by new vices, tainted variously by foreign disease, and dwindled in all their hopes and aims and means of progress, through an overshadowing race. "*We have therefore reason to believe from man's fertile intermixture, that he is one in species*;" and that all organic species are divine appointments which cannot be obliterated, unless by annihilating the individuals representing the species." (BIBLIOTHECA SACRA, Oct., 1857.)

We hail with lively satisfaction this emphatic expression of the matured opinions of one whose authority in matters pertaining to the philosophy of natural history is second to that of no living votary of science.

since they are familiar to the most superficial observer. Here, then, is an instance of identity of psychical traits, proving a specific identity, among varieties so diversified in physical structure as to suggest the idea of many different species. In like manner, the most proximate species are often recognized as distinct by the diversity of their psychical constitution. "It would not be easy to point out two species of animals confessedly distinct, which are more similar in their form and structure than the African and Asiatic elephants. Now the psychical qualities of these tribes differ. The African elephant, though partially tamed in ancient times for the purposes of warfare, has never been known to display that docile understanding and gentle temper which are so remarkable in the elephants of India, and particularly in those of Ceylon. The ox kind, and the bison and buffalo, are species nearly allied, though perhaps not so closely related as the different tribes of elephants. Similar differences in regard to psychical endowments exist between these animals. One of the species above men-

tioned is among the most subdued slaves and immemorial companions of mankind; the others are but imperfectly tamable by any means that have been devised."*

In applying this test to the question of the relationship among the various tribes of mankind, it must be confessed that first impressions are adverse to the doctrine of specific identity, if this require a sameness of mental endowments. Thus the careful and candid writer, whom we have just quoted, draws the following contrast: "Let us imagine, for a moment, a stranger from another planet to visit our globe, and to contemplate and compare the manners of its inhabitants, and let him first witness some brilliant spectacle in one of the highly civilized countries of Europe,—the coronation of a monarch, the installation of St. Louis on the throne of his ancestors, surrounded by an august assembly of peers and barons, and mitred abbots, anointed by the cruse of sacred oil, brought by an angel to ratify the divine privilege of kings; let the same person be

* Prichard. Physical History of Mankind. Vol. I.

carried into a hamlet of Negro land, in the hour when the sable race recreate themselves with dancing and barbarous music ; let him then be transported to the saline plains, over which bold and tawny Mongols roam, differing but little in hue from the yellow soil of their steppes, brightened by the saffron flowers of the tulip and the iris ; let him be placed near the solitary den of the Bushman, where the lean and hungry savage crouches in silence like the beast of prey, watching with fixed eyes the creatures which enter his pit-fall, or the insects and reptiles which chance brings within his grasp ; let the traveller be carried into the midst of an Australian forest, where the squalid companions of kangaroos may be seen crawling in procession, in imitation of quadrupeds : can it be supposed that such a person would conclude the various groups of beings whom he had surveyed to be of one nature, one tribe, or the offspring of the same original stock ? It is much more probable that he would arrive at an opposite conclusion."*

* Prichard. Natural History of Man.

Prof. DRAPER, quoting the above lines, pertinently remarks that "much would depend on the previous training of the illustrious stranger. If his mind had been imbued with a better philosophy than that which prevails in this, our lower world, he might look with an equal eye on the transitory fashions before him, and penetrate to the first principles of things through the false glare of pomp, or through debasement and degradation, and so arrive at a conclusion precisely the opposite of the foregoing, in the same manner as Dr. Prichard himself. . . . Beneath the feathers in the one case and the leaves in the other, he might discern the same ruling idea and detect the same human nature; or if his vision could reach into the past, and recall the credulous Greek worshipping before the exquisitely perfect statues of the deities of his country, beseeching them for sunshine or for rain, and then turn to the savage Amaiman, who commences his fast by taking a vomit, and for want of a better goddess, adores a dried cow's tail, imploring it for all earthly goods—again the same principle would emerge, only

illustrated by the circumstance that the savage is more thorough, more earnest in his work. In fact, wherever we look man is the same."*

Dr. Prichard illustrates the same general proposition by numerous examples, of which we can cite but a single one. He is describing the religious system of the Esquimaux: "It seems, on the whole, that the future state of the old pagan Esquimaux or Greenlanders was in a great measure a state of retribution, of rewards and punishments. Happiness and misery were at least not dispensed with indifference to merit and demerit. Torngarsuk is the chief of spirits, dwelling in his happy subterranean mansion. His mother or wife is a mischievous being. This Proserpine of the north lives in a great house under the ocean, where by magic spells she can detain all the animals of the sea. In the oil-jar under her lamps, sea-birds swim about. Her throne is guarded by rampant seals, or defended by a great dog, who never sleeps but the twinkling of an eye. So many curious traits occur in the description of this

* J. W. Draper. Op. cit. P. 570.

infernal goddess and her abode, which recall the Proserpine of classical mythology, and the Pattala of the Hindoos, and the subterranean scenes of enchantment among the Arabs, that we might well be inclined to derive these fables from a common source, if the resemblance between them was not better accounted for by referring it to the common laws of the human mind, and to the tendency of the imagination to create similar fictions with reference to particular subjects, and under the influence of corresponding feelings and impressions. But this brings out so much the stronger a proof, that the mind is the same in different countries and in different races of men."*

Our limits forbid us to follow this learned and reliable authority any further in his detailed analysis of the mental characters of the lower races.† We can only now add his summary conclusions. "We contemplate," says he, "among all the diversified tribes, who are endowed with reason and speech, the same inter-

* Prichard. Physical History of Mankind. Vol. I., p. 190.

† See Appendix D.

nal feelings, appetencies, aversions ; the same inward convictions, the same sentiments of subjection to invisible powers, and, more or less fully developed, of accountableness or responsibility to unseen avengers of wrong and agents of retributive justice, from whose tribunal men cannot even by death escape. We find everywhere the same susceptibility, though not always in the same degree of forwardness or ripeness of improvement, of admitting the cultivation of these universal endowments, of opening the eyes of the mind to the more clear and luminous views which Christianity unfolds, of becoming moulded to the institutions of religion, and of civilized life : in a word, the same inward and mental nature is to be recognized in all the races of men. When we compare this fact with the observations which have been heretofore fully established as to the specific instincts and separate psychical endowments of all the distinct tribes of sentient beings in the universe, we are entitled to draw confidently the conclusion, that all human races are of one species and one family."*

* J. C. Prichard. Natural History of Man. London. 1843. P. 545.

If this conclusion appears startling, in view of the reports given by travellers of those degraded forms of humanity to be found in Southern Africa and in Australia, it may, perhaps, lessen the force of the objection, to point to parallel cases existing in nearly all the great cities in the heart of civilized Christendom. This parallel between the most brutalized savages and the "dangerous classes" of our large cities, was suggested by Dr. Carpenter, in the *Edinburgh, Review* for October, 1848, and has since been extended in his notice of the "Varieties of Mankind," to which reference has been already several times made.

This conformity as to the fundamental elements of moral nature between the different races of mankind, is entirely consistent with a very large degree of diversity in moral and intellectual manifestations; and the extent to which such a moral and intellectual diversity may, under the influence of causes common to a whole people, become the common heritage of a tribe, and thus ultimately characterize the

race, is a legitimate subject of curious, and it may be, very profitable study.*

The evidence of this close conformity in the elements of psychical nature among all the races of men is regarded as so significant of their "moral brotherhood," as to have commanded the assent of a large majority of even that class of naturalists who, like Agassiz, consider these races as distinct in their origin, and as having been *originally* marked with the same physical peculiarities which now characterize them respectively. "We recognize," says this eminent zoologist, "the fact of the unity of mankind. It excites a feeling that raises men to a most elevated sense of their connection with each other. It is but the reflection of that divine nature which pervades the whole being. It is because men feel thus related to each other, that they acknowledge those obligations of kindness and moral responsibility which rest upon them in their mutual relations.

* See "Moral and Intellectual Diversity of the Races," by COUNT GOBINEAU. A further notice of this subject will be given in the second division of this essay.

Where the relationship of blood has ceased, do we cease to acknowledge that general bond which unites all men of every nation? By no means. This is the bond which every man feels more and more the farther he advances in his intellectual and moral culture, and which in this development is continually placed upon higher and higher ground, so much so, that the physical relation arising from a common descent is finally lost sight of in the consciousness of higher moral obligations. It is this consciousness which constitutes the true unity of mankind."*

These are noble thoughts, expressed in eloquent words. We cannot, then, but own our surprise that the distinguished writer has permitted his honored name to appear on the title-page of a work, the tendency, and we might, perhaps, without injustice, add, the undisguised object of which is, to revolutionize the practical moral convictions of mankind which he has thus so eloquently vindicated.

So, too, the *Westminster Review* (April, 1856),

* Christian Examiner. Boston. January, 1850.

while advocating the plurality of origin, and the primeval diversities of the principal types of men, yet asserts their "strict unity, a unity manifested physically, intellectually and morally, a sameness from the beginning in instincts, propensities, feelings, and faculties, hopes and fears, and everywhere the like reverent looking upwards to a great unseen Cause, and constant adumbration of a future heritage."

We might now, we think, reasonably challenge the assent of our readers to the doctrine of the unity of the human species; but inasmuch as that doctrine has been assailed of late from quarters of attack not yet noticed, we propose, in the second division of our subject, to examine the grounds on which Prof. Agassiz, while recognizing the "unity of mankind," yet contends for primordial diversities of type. We hope to show that the very grounds on which natural zoological provinces are established, suffice to refute the idea of a multiple origin for identical species, and that there is no difficulty in accounting for the actual distribution of man over the face of the earth by natural agencies,

while the theory of Agassiz involves the idea of a needless repetition of the miracle of creation. Inasmuch, too, as he is the most conspicuous assailant of the argument in favor of the common origin of mankind, derived from a consideration of linguistic affinities, we shall attempt to vindicate the validity of the philological proofs of such origin, and after again adverting to the actual moral and intellectual diversities of the races, shall aim to show that while the too exclusive contemplation of these admitted diversities is apt to give the mind a bias in favor of the doctrine of the primeval distinctions of races, and while on a few points the only available evidence in refutation of such an assumption may appear indirect or incomplete, yet when the entire argument is viewed with reference to the mutual dependence of its several branches, and the obvious convergence of its separate lines, it will be found to lead to the necessary conclusion that all the varieties of man must have sprung from a common parentage as well as own a common nature.

# Part II.

# COMMON PARENTAGE

OF THE

# HUMAN RACES.

# COMMON PARENTAGE

OF THE

# HUMAN RACES.

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## CHAPTER I.

### PLURAL OR SINGLE ORIGIN OF IDENTICAL SPECIES AMONG PLANTS AND ANIMALS.

In the former part of our argument we stated at some length the evidence in favor of the specific unity of the various races of mankind, and showed, as we cannot but think, that this doctrine, supported as it is by many independent lines of argument all converging to this necessary conclusion, could no longer be considered doubtful. Now in accordance with the idea involved in the definition of species as laid down by most philosophical and trustworthy naturalists, it has commonly been held that all the

varieties of identical species must have sprung from a common ancestry. Thus Dr. PRICHARD, throughout his admirable writings, treats of specific unity as tantamount to that of community of descent, and uses the terms interchangeably. But we are free to admit that the proof of original descent is an inference from observed facts rather than a necessary deduction from the doctrine of unity of species. If mankind belong to several species, the question is, of course, settled in favor of plurality of origin; but the converse of the proposition does not follow of necessity. It is at least conceivable that instead of a single pair God may have formed any number of first men and women who were yet as specifically identical as if they had been born of the same parents. This question has been discussed with much earnestness by Prof. AGASSIZ, who has repeatedly given expression, in language as decided as it is eloquent, to his confirmed belief in the "Unity of Mankind." Thus, in 1845, he declared: "There exists, then, a real difference between the inhabitants of the different continents, and the remarkable coïnci-

dence which we have pointed out between their primitive distribution and the circumscription of the faunæ in the same continents, is a sufficient indication that their diversity may be traced upwards to the same primordial cause. But while this diversity has the same origin, has it also the same significance in man as among animals? Evidently not. And here again the superiority of the human race and its greater independence in nature are revealed. Whilst animals are of distinct species in the different zoological provinces to which they belong, man, notwithstanding the diversity of his races, constitutes *a single, identical species* (une seule et même espèce) *over the whole surface of the globe.* In this respect, as in so many others, man appears to us an exceptional being in this creation, of which he is at once the object and the end." *

But while thus distinctly insisting upon the specific unity of the races, he yet contended

* Notice sur la Geographie des Animaux. L. Agassiz. Revue Suisse. 1845. Quoted by Dr. Bachman in the Charleston Medical Journal Review, for July, 1855.

that the peculiarities of physical conformation observed among them, and certain facts connected with their geographical distribution, were not explicable on the hypothesis of a common origin, and that they required us to suppose that "men were created in nations," distributed over the face of the earth as we now find them distributed, after setting aside the known migrations of a few races. These several nations, however, were composed of individuals possessing the same essential nature wherever they were created, but had that nature modified to some extent in accordance with the special conditions in which each nation was destined to exist. Of late, Prof. AGASSIZ, in his "Sketch of the Natural Provinces of the Animal World, and their relation to the different Types of Man," has altered the phraseology in which he enunciates his propositions. He now adopts Dr. MORTON's definition of species as "a primordial organic form," and accordingly, he must recognize his primeval types of mankind as so many distinct species; but the difference respects rather the use of terms than

any change of opinion as to facts. He still contends for the "Unity of Mankind," maintaining that a strict unity as to moral nature, involving, therefore, the idea of a moral brotherhood of all the races, is yet consistent with the idea of specific diversity according to the sense in which he now uses the word species, as applicable to all primordial types.

We notice this apparent discrepancy between the early and later utterances of Prof. Agassiz on this question, with no desire to convict him of a want of consistency with himself. We abhor that species of *argumentum ad hominem* which aims to discredit the actual opinions of an opponent by raking up his earlier, and it might be, his less matured views on the same subject. But in point of fact, we do not consider that in the present case there is any substantial difference between the opinions announced in 1845, and those promulgated in 1853. We have thought proper to quote the former, because we consider that they are expressed in language which conforms to common usage, while the latter are involved in some confusion,

owing to the ambiguity of the terms in which they are couched. For while his recent statement asserts in terms the doctrine of multiple species, it admits the unity of essential nature for all the so-called human species, which is tantamount to specific unity in the sense in which the term is commonly used. It is worthy of notice in this connection, that since the earlier enunciation of Prof. AGASSIZ' peculiar opinions, SIR CHARLES LYELL, and that eminent zoologist, the late Prof. EDWARD FORBES, had presented cognat considerations in opposition to the theory of multiple origins for the different varieties of an identical species. We cannot help suspecting that this fact had some weight with Prof. AGASSIZ, however unconsciously on his part, in inducing him to make the modification referred to, whereby, under cover of an ambiguity in the terms, he seemingly avoids the force of their convincing arguments. That he has not completely shifted his ground, appears from a remark let fall by him at the regular meeting of the Boston Society of Natural History, held July 2, 1856,

as reported in the "Proceedings," Volume VI., page 8.

"Dr. STORER asked what was the northern geographical limit of *Cistudo blandingii*. In 1842 he presented to the Society a specimen from Bradford, Massachusetts, until which time it had not been observed by naturalists north of South Carolina.

"Prof. AGASSIZ replied that he had found the eggs in Massachusetts, and raised the animal from them. There is no evidence of its existence between Massachusetts and Illinois, where it is again found. It has a circle of distribution in the north-western States, and another disconnected range in Massachusetts. *He thinks the animal may have originated in the two different localities.*" Here the Professor recognizes identity of species in individuals of different origin, because, we presume, of an identity in type. So, too, he asserts a diversity of origin for different nations of mankind, even where they exhibit the same physical type. For while he attempts to demonstrate the existence of eight distinct types of

man, which, notwithstanding their admitted "close unity" and "moral brotherhood," he now designates as so many separate species, he further contends for an indefinite number of distinct creations of men and women within the limits of one and the same type. It is this last proposition which we shall now discuss. So far as specific diversity is ascribed to the human races in any other sense than that which by a conventional use attaches to the assumption of separate origins, we consider that we have sufficiently refuted the doctrine in our former article.

In considering the positive grounds on which Prof. AGASSIZ relies to support the doctrine of a plural origin of mankind, we notice, in the first place, that which seems to have most influence in giving a bias to his mind in relation to this subject,—namely, the alleged analogy of the inferior animals. He maintains that there is an otherwise inexplicable "coïncidence between the circumscription of the races of man and the natural limits of different zoological provinces characterized by peculiar distinct species of animals." The existence of such

natural limits for many species is, indeed, undeniable, and the fact had not escaped the attention of philosophical naturalists of the last century. "It is an undoubted fact," says Buffon, "that when America was first discovered, its indigenous quadrupeds were all dissimilar to those previously known in the old world. The elephant, the rhinoceros, the hippopotamus, the camelopard, the camel, the dromedary, the buffalo, the horse, the ass, the lion, the tiger, the apes, the baboon, and a number of other mammalia, were nowhere to be met with on the new continent; while in the old, the American species, of the same great class, were nowhere to be seen—the tapir, the lama, the pecari, the jaguar, the cougar, the agouti, the paca, the coati, and the sloth." The contemplation of such facts soon led to the induction of a general law respecting the geographical distribution of animals and plants,—namely, "the limitation of groups of distinct beings to regions separated from the rest of the globe by certain natural barriers." "It will be observed," says Lyell, in quoting these statements of Buf-

fon, "that this language respecting 'natural barriers,' which has since been so popular, would be wholly without meaning, if the geographical distribution of organic beings had not led naturalists to adopt very generally the *doctrine of specific centres*, or in other words, to believe that each species, whether of plant or animal, originated in a single birth-place. Reject this view, and the fact that not a single native quadruped is common to Australia, the Cape of Good Hope, and South America, can in noways be explained by adverting to the wide extent of intervening ocean, or to the sterile deserts, or the great heat or cold of the climates, through which such species must have passed, before it could migrate from one of those distant regions to another. It might fairly be asked of one who talked of impassable barriers, why the same kangaroos, rhinoceroses, or lamas, should not have been created simultaneously in Australia, Africa, and South America? The horse, the ox, and the dog, although foreign to these countries until introduced by men, are now able to support themselves there

in a wild state ; and we can scarcely doubt that many of the quadrupeds at present peculiar to Australia, Africa, and South America, might have been continued in like manner to inhabit each of the three continents, had they been indigenous, or could they once have got a footing there as new colonists."*

It has been already mentioned that Prof. AGASSIZ, in his earlier writings on this subject, while he admitted the fact of the circumscription of most species within certain natural barriers, and thereby identified the different zoölogical provinces, yet contended that there were also numerous instances of identical species being found in more than one province and thus separated by a wide extent of intervening water, or else of land impassable for such species by reason of its climate or sterility. Upon such facts he mainly relied as an analogical argument in favor of his doctrine of the multiple origin of a single human species. About the same time Prof. EDWARD FORBES was zealously engaged in investigating the laws of the geograph-

* Lyell. Op. cit., p. 608.

ical distribution of organic beings, and contributed to the "Memoirs of the Geological Survey of Great Britain" an elaborate and well-considered paper "On the connection between the Distribution of the Existing Fauna and Flora of the British Isles, and the Geological Changes which have effected their Area, especially during the epoch of the Northern Drift." In this paper it is clearly shown :

"1st. That species of opposite hemispheres, placed under similar conditions, are *representative* and not *identical*.

"2d. Species occupying similar conditions in geological formations far apart, and which conditions are not met with in the intermediate formations, are representative and not identical.

"3d. Wherever a given assemblage of conditions, to which, and to which only, certain species are adapted, are continuous, whether geographically or geologically, identical species range throughout."

He then argues that these facts "go far to prove" the doctrine of the relationship of all the individuals composing a species, and their

consequent descent from a single progenitor, or from two, according as the sexes might be united or distinct. Adverting to the notorious fact that the doctrine of the plural origin of identical species sprang out of apparent anomalies and difficulties in distribution, he proceeds to show how these may be reasonably accounted for, without having recourse to such a supposition. "There are three modes by which an isolated area may become peopled by animals and plants: 1st. By special creation within that area. 2d. By transport to it. 3d. By migration *before* isolation." He clearly proves that where identical species are found in different localities under such circumstances as to preclude the idea of transport from one to the others, such outlying spots were once parts of a *continuous area*, the whole of which exhibited the conditions required for the support of the species in question, and that owing to subsequent geological changes, such as the substitution of land for water or water for land, or simply climatal changes, detached spots became isolated from the rest. This will be rendered

more intelligible by an example. "We have in the mountain districts of Scotland, England and Wales, a considerable flora and a portion of our fauna, which cannot be traced to the migration of animals and plants over the great Germanic plain, which accounts for the major part of our British species, seeing that they are not inhabitants of the ancient west of Europe, but of Scandinavia. How did they come? The Alpine character of most of them forbids us by any stretch of probability to conduct them across the Germanic plain from its most northern bound. . . . . We have seen that the great Germanic and central British plains themselves were portions of the elevated bed of a preëxisting sea, which sea, when we trace its relics, is found to have covered a great part of the British Isles as now exposed, so that during its existence our mountains must have been comparatively low islands. This was the sea of the *Glacial* period, properly so called, when the climate of the whole Northern and part of Central Europe was very different from what it is now, and far colder. The remains

of the marine animals found in the strata deposited in that sea indubitably prove this fact, and, as will be seen presently, the flora of its islands as fully bears out such climatal evidence. This was the epoch of glaciers and icebergs, of boulders and groovings and scratches. It exhibited conditions, physical and zoological, similar, indeed nearly identical, to those now to be met with on the north-eastern coast of America, within the line of the summer floating ice. . . . Now it was during this epoch that Scotland and Wales, and part of Ireland, then groups of lands in this ice-bound sea, received their Alpine Flora and a small portion of their fauna. Plants of sub-arctic character would then flourish to the water's edge, but when a new state of things commenced, when the bed of the glacial sea was upheaved, its islands converted into mountains, its climate changed, and a suitable population of animals and vegetables diffused over its area, the plants of the colder epoch survived only on the mountainous regions which had been so elevated as therefore to retain climatal conditions similar to those which

had existed when those regions were low ridges or islands in a glacial sea."

Having stated with great clearness and precision many other similar cases, Prof. FORBES sums up the whole in this abstract proposition: "*The specific identity, to any extent, of the flora and fauna of one area with those of another, depends on both areas forming or having formed part of the same specific centre, or on their having derived their animal and vegetable population by transmission, through migration over continuous or closely contiguous land, aided, in the case of Alpine Floras, by transportation on floating masses of ice.*"*

* The interesting fact, thus brought to light, of a *westward progress* of the great mass of British animals and plants, over a then unbroken land (the upheaved bed of the glacial sea), from the central Germanic plains, furnishes a satisfactory explanation of the peculiar poverty of the fauna of Ireland. For "the accurate calculations of the late Mr. Thompson, of Belfast, concerning the *reptile* statistics of Ireland, England and Belgium, respectively, have succeeded in showing, with much presumptive reason, how the formation of St. George's Channel, *before* that of the German Ocean, interrupted the march of these wanderers to the far West, and debarred an immense proportion of them from an entry into Ireland,—which would otherwise have colonized that country equally with England." (WOLLASTON. *Variation of Species, p.* 136.)

This last named writer, while endorsing the general statement of Prof. Forbes with respect to the existence of *representative species*, expresses the conviction that the doctrine of *representation* has been too much relied upon; and that where beings of a *nearly* identical aspect

About the date of the publication of this paper by Forbes, Prof. AGASSIZ was maintaining the doctrine of the radiation of identical species from several distinct centres. Thus in the Principles of Zoology by AGASSIZ and GOULD, published a little later, we find the following statement: "There is only one way to account for the distribution of animals as we find them; namely, to suppose that they are *autochthonoi;* that is to say, that they originated like plants on the soil where they are found. In order to explain the particular distribution of many animals, we are even led to admit that they must have been created at several points of the same zone, as we must infer from the distribution of aquatic animals, especially that of fishes. If we examine the fishes of the different rivers of the United States, peculiar species will be found in each basin, associated with others which are common to several basins. Thus, the Dela-

are detected in opposite divisions of the earth, it is more often the case that members of them have been transported at a remote period (just as Forbes explains the case of *identical* species being found in detached spots), and have become gradually altered by the circumstances in which they have been placed, than that the respective phases were produced *in situ* on patterns almost coïncident. (Ib. p. 183.)

ware river contains species not found in the Hudson. But, on the other hand, the pickerel is found in both. Now, if all animals originated at one point, and from a single stock, the pickerel must have passed from the Delaware to the Hudson, or *vice versa*, which it could only have done by passing along the sea-shore, or by leaping over large spaces of *terra firma;* that is to say, in both cases it would be necessary to do violence to its organization. Now such a supposition is in direct opposition to the immutability of the laws of nature. . . . Even man, although a cosmopolite, is subject, in a certain sense, to this law of limitation. While *he is everywhere the one identical species*, yet several races, marked by certain peculiarities of features, are recognized." * Now, however, having become satisfied, in view perhaps of the facts cited by Prof. FORBES, that the species in the different provinces are not identical, he shifts his position a little, and no longer holds that the human races are "everywhere of one

* Principles of Zoology. By L. AGASSIZ and A. A. GOULD. Boston, 1848. P. 180.

identical species," but doubtless regards them as '*representative*,'—and yet, as we have already said, the difference is more in the use of terms than a substantial one ; for he still avers that his actual opinions "do not conflict with the idea of the unity of mankind," and "that the moral question of brotherhood is not affected by these views." Again, in 1850, he maintained the unity of mankind with great earnestness, and held "that the *physical* relation arising from a common descent is finally lost sight of in the consciousness of higher moral obligations, which consciousness constitutes the true unity of mankind. . . . We can therefore take it as a matter of fact, that, as we find men actually living together in the world, it is not the physical relation which establishes the closest connection between them, but that *higher relation arising from the intellectual constitution* of man."* Unless, therefore, he now attaches more weight to slight physical differences in the discrimination of species than to intellectual and moral characteristics, in direct contravention of

* Christian Examiner, Boston, 1850.

the principles so eloquently expounded in the passages just cited, and equally in conflict, as it appears to us, with the spirit and true meaning of the maxim announced in the chapter of his "Principles of Zoology," headed "Intelligence and Instinct," where it is said that "the *constancy of species* is a phenomenon depending on the immaterial nature," * we must hold that his present opinions, though announced in a somewhat modified phraseology, are substantially the same as when, in 1848, he asserted that "man is everywhere the one identical species;" and so holding, we consider that his doctrine of more than one birthplace for this one identical species is discredited by the striking facts and cogent reasoning of Prof. FORBES, whose admira-

* In another passage of the same work this idea is brought out more distinctly. On page 9 of the first edition, or page — of the edition 1858, we find the following words: "Besides the distinction to be derived from the varied structures of organs there are others less subject to rigid analysis, but no less decisive, to be drawn from the immaterial principle with which every animal is endowed. *It is this which determines the constancy of species from generation to generation*, and which is the source of all the varied exhibitions of instinct and intelligence which we see displayed, from the simple impulse to receive the food which is brought within their reach, as observed in the polyps, through the higher manifestations, in the cunning fox, the sagacious elephant, the faithful dog, and the exalted intellect of man, which is capable of indefinite expansion." For continuation of this note, see Appendix E.

ble paper in the work already cited,* we would earnestly commend to the attention of those who feel an interest in this question. Certain it is that this learned and talented naturalist has conclusively shown that the analogy of inferior animals and plants is altogether adverse to the hypothesis of a plural origin of identical species. We consider, therefore, that we might fairly rest our case on this incontrovertible argument of Prof. FORBES; but, in view of the fact that AGASSIZ has attempted to evade its force by substituting "representative" for "identical" species, we propose to notice some of the special statements in his "Sketch of the Natural Provinces of the Animal World."

His first statement is, "that the boundaries within which the different natural combinations of animals are known to be circumscribed upon the surface of the earth, coïncide with the *natural range* of distinct types of man." We might well take exception to this statement, as taking for granted a material point which has not been fully demonstrated. It has not been

* Memoirs of the Geological Survey of Great Britain. London, 1846.

proved, nor, in our opinion, can it be proved, that there is any fixed relation between distinct types of men and definitely circumscribed regions.

But not to insist upon this obvious fallacy, let us inquire a little more closely into the facts which are relied upon to make out the alleged analogy. In the first place, we contend that the division of the earth's surface into eight "great zoölogical realms," each subdivided into a number of subordinate faunæ, as set forth in the "Sketch," is purely arbitrary, so far, at least, as the precise limits of most of the realms are concerned. And this, it should be observed, is a point of great significance, since the argument which we criticise consists in an alleged coïncidence between these limits and the natural range of distinct types of man. Now if these limits be indeterminable, the asserted coïncidence cannot be established, and the argument falls to the ground. Accordingly it will be found, that in several instances the limits of the zoölogical provinces have evidently been assigned in view of the range of certain types of mankind

supposed to be definitely ascertained, and *assumed* to be coïncident with the boundaries of the provinces. Thus a part of the doctrine which required independent proof is quietly assumed, and then made use of to prove the rest. On what other ground than the recognition of the unity of type among all the American Indian tribes, and the consequent necessity of admitting for them a very extensive "natural range," can there be a plausible pretext for assigning to one zoölogical province the whole of the American Continent, save only the Arctic realm, which lies north of the isothermal line of 32° F.? No other reason can be given that will not invalidate the limits of most of his great realms, that will not, for example, require us to include the Arctic region in the same category with the whole of North America. For while we grant that a large majority of the species found in his Arctic realm are peculiar to it, it is undeniable that a very considerable number range through the Northern States of our Union, and not a few extend even to the Gulf of Mexico. We shall cite a number of examples, for which we are

indebted to Dr. BACHMAN, the leading authority in all matters respecting the mammalian department of American zoölogy. "The common wolf (*Canis lupus*) exists in this same Arctic realm, and has been found as far north as the foot of man has trodden. It crosses Behring Straits on the ice, while the natives have been but recently seen crossing it in canoes. It is found in Kamtschatka, the Kurille Islands, Japan and China. It inhabits the whole of the Russian Empire, Tartary, Austria, France, Germany, Italy, and, indeed, the whole of Europe down to the tropics. It exists in America, from the furthest north, through Labrador and Canada--in the whole United States—in Oregon and California. It is common in Texas; is noticed in Captain Sitgreaves' expedition, as existing in New Mexico; it ranges down to the Isthmus of Panama, and how much further to the south we are not informed. The ermine is another species, existing in the Arctic realm, which Prof. Agassiz has omitted to notice. It exists in every part of Europe where the wolf is found, and also throughout the whole of Asi-

north of the tropics." "In America it ranges from the most northern limit attained by Franklin, Lyon, and Parry, to Mexico and California." "This extensive range of two of the most common species found in his Arctic realm, will cover all the ground assigned by Prof. Agassiz to every tribe, form of skull, and shade of color, in his Arctic, Mongol, European, and American realms. Thus, if his doctrine of the diversity of human species could be found true, it would appear that man, endued with intelligence, possessing powers of invention, fond of navigation, omnivorous in his appetites, restless and migratory in his habits of locomotion, and subjecting the lower animals to his will, is restricted to a narrower range than the wolf, the ermine, and many others that might be named."*

But our main object in citing these examples of a wide range of certain species, forming a part of the Arctic fauna, was to demonstrate the purely arbitrary principles on which definite

* J. Bachman, D. D., in Charleston Medical Journal and Review. July, 1855, p. 494.

limits have been assigned to the so-called Arctic realm. Prof. Agassiz determines those limits by observing the natural range of a few species of animals and plants arbitrarily selected out of the entire fauna and flora, when a different selection would have totally changed the whole aspect of the case. We have just seen how it is with the wolf and the ermine, both belonging to his Arctic realm, and both passing widely beyond the arbitrary southern boundary, the isotherme of 32° F. But numerous other species may be named, whose ranges utterly invalidate the boundaries of this so-called natural zoölogical province. The beaver, formerly existing all over the United States, and still found over Oregon and California, in New Mexico, in Canada, and Labrador, is an example. It is also preserved in Russia, Norway, and Sweden, though nearly extinct in other parts of Europe, where it formerly abounded until destroyed by hunters. Another instance is that of the otter, which ranges over the whole of North and South America, "from pole to pole." Other species, existing in the

Arctic regions, and yet ranging far beyond the limits assigned to the Arctic realm of Prof. Agassiz, are the wolverine, the musk-rat, and the mink, among the mammalia; the snow-goose, the Canada crane, the golden plover, the red phalarope, the raven, the great horned owl, and many other birds, and a large number of plants. The very plant selected by Prof. Agassiz as characterizing his Arctic realm, the reindeer moss, has a very extensive range in Asia, Europe, and America, having been found as far south as Virginia, and even in South Carolina.* Now the learned Professor himself admits as many as thirteen distinct faunæ in his great American realm. We are at a loss to conceive why these faunæ should be associated into one great zoological province, from which the Arctic fauna is excluded, seeing that so many of the species found in the latter range so extensively through the regions assigned to the former. Is it not apparent that the arrangement was forced upon him by the necessities of his system? He considered the Esquimaux as representing one

* Ibid.

primordial type of man, and the various tribes of American Indians as another; he had, therefore, to make two zoological realms in correspondence with the range of these two types of man. Now we must insist that it is a glaring perversion of the simplest rules of logic to think of establishing, by such a procedure as this, the proposition that "the boundaries within which the different natural combinations of animals *are known to be circumscribed* upon the surface of our earth, coïncide with the natural range of distinct types of man." After all, it turns out that the boundaries are wholly arbitrary, and the provinces are constructed with the express view of being made to "coïncide" with the range, real or assumed, of the distinct types of man.

But again, when Prof. Agassiz avers "that the laws which regulate the diversity of animals and their distribution upon the earth apply equally to man, *within the same limits and in the same degree*," he surely overlooked numerous facts which can by no means be made to harmonize with this theory. Some of these are stated with so much pertinency and force by

Dr. Bachman, that we shall borrow his language: "Prof. Agassiz has rather too positively conjectured that his Arctic man had been created in the snow-clad, cold, and dreary climate in which he now resides—that he was an autochthon there, and that his progenitors never possessed a southern home. We contend this to be an utter impossibility, from the organization of the Esquimaux or any other variety of man; the artificial means by which he must supply himself with food, clothing, and a shelter, and the intensity of cold against which he must necessarily be protected." He then, in illustration of this point, makes copious extracts, of which we give a few specimens, from Richardson's "Arctic Expedition in search of Sir John Franklin." "The Esquimaux wintering on the coast are in darkness at midwinter; the reindeer and musk-oxen have then retreated, and fish cannot, at that season, be procured in their waters; *life, therefore, can only be maintained in an Esquimaux winter by stores provided in summer.*"* Dr. Bachman

* J. Bachman, D. D. Op., cit. p. 502.

justly contends that it is not in the range of probability or even of possibility, without a succession of miracles, such as we have no right to look for,—save the miracle of man's first creation,—for the Arctic man, had he been created there, to have survived a single winter or even a single month. Even at the present day, with all the advantages which have been derived from ages of experience, transmitted from generation to generation ; with bows and arrows to slay the musk-ox and reindeer ; with harpoons for the whale, and spears for the seal ; with houses already erected, and clothing manufactured, we are told if the tribe has been improvident, or the seal fails to make his appearance at the mouth of his hole in the ice, or no whale is captured or driven ashore to supply his lamp, so essential to afford him warmth and light, the inhabitants of whole villages perish from cold and famine."*

In like manner Dr. PICKERING argues, that "the species of organic beings allotted to the various regions of the globe have in no in-

* Ib., p. 506. See, also, Dr. Kane's Arctic Explorations: passim.

stance been modified by climate or by other external circumstances ; but each has been originally fitted, in structure and constitution, precisely to the station in which it is naturally found. In a district exposed to extremes, whether of heat, cold, moisture, or aridity, the indigenous animal or plant has the means of avoiding them, or else is protected against them in its outer covering ; purposes accomplished in various modes, some of which are sufficiently familiar. It will follow that if Europe were the proper home of the white man, he would be born with natural clothing ; with, at least, some inherent provision securing the maintenance of life without aid from art. *Man then does not belong to cold and variable climates ; his original birth-place has been in a region of perpetual summer, where the unprotected skin bears without suffering the slight fluctuations of temperature. He is, in fact, essentially a production of the tropics, and there has been a time when the human family had not strayed beyond these geographical limi s.*"*

* C. PICKERING, M. D. Races of Man, etc.

## CHAPTER II.

### EVIDENCE OF COMMUNITY OF DESCENT DERIVED FROM LINGUISTIC AFFINITIES.

We have thus seen that the analogy of other animals furnishes no argument against the doctrine of a single birthplace for the human races since the difference in the circumstances destroys the force of the analogy. We are now prepared to go further, and to show that the new doctrine is itself utterly irreconcilable with some of the best established facts in modern science. We proceed to indicate a few out of very many striking facts and inductions furnished by the study of comparative Philology.

The universality of spoken language, and especially the existence of terms in every language expressive of abstract ideas and relations, have been justly regarded as pregnant tokens of the intellectual nature of all the varieties of

man. And when we find in the tongues of different tribes the same words to express the same ideas, and similar grammatical constructions—we cannot avoid the conclusion that they must have had a common origin. Of course, such a fact did not escape the attention of the advocates of the new theory: let us see how they have attempted to get over it. In an article published by Prof. Agassiz, in 1850, in the *Christian Examiner*, of Boston, we find the following passage, which has since been cited by Nott and Gliddon with an air of triumph, as an "admirable expression of new and most interesting views on the natural origin of speech:"

"As for languages, their common structure, and even the analogy in the sounds of different languages, far from indicating a derivation of one from another, seems to us rather the necessary result of that similarity in the organs of speech which causes them naturally to produce the same sound. Who would now deny that it is as natural for men to speak as it is for a dog to bark, for an ass to bray, for a lion to roar, for a wolf to howl, when we see that no na-

tions are so barbarous, so deprived of all human character, as to be unable to express in language their desires, their fears, their hopes? And if a unity of language, any analogy in sound and structure between the languages of the white races, indicate a closer connection between the different nations of that race, would not the difference which has been observed in the structure of the languages of the wild races—would not the power the American Indians have naturally to utter gutturals which the white man can hardly imitate, afford additional evidence that these races did not originate from a common stock, but are only closely allied as men, endowed equally with the same intellectual powers, the same organs of speech, the same sympathies, only developed in slightly different ways in the different races, precisely as we observe the fact between closely allied species of the same genus among birds?

"There is no ornithologist who ever watched the natural habits of birds and their notes, who has not been surprised at the similarity of intonation of the notes of closely allied species,

and the greater difference between the notes of birds belonging to different genera and families. The cry of birds of prey is alike unpleasant and rough in all; the song of all the thrushes is equally sweet and harmonious, and modulated upon similar rhythms, and combined in similar melodies; the chit of all titmice is loquacious and hard; the quack of the duck is alike nasal in all. But who ever thought that the robin learned his melody from the mocking-bird, or the mocking-bird from any other species of thrush? Who ever fancied that the field crow learned his cawing from the raven or the jack-daw? Certainly, no one at all acquainted with the natural history of birds. And why should it be different with men? Why should not the different races of men have originally spoken distinct languages, as they do at present, differing in the same proportions as their organs of speech are variously modified? And why should not these modifications in their turn be indicative of primitive differences among them? It were giving up all induction, all power of arguing from sound premises,

if the force of such evidence were to be denied."

But surely it cannot be necessary to point out the obvious fallacy of such analogical reasoning as this. We admit that inarticulate cries are as "natural" to man as to other mammalians, and that a certain degree of similarity in the intonation of these sounds would not of itself indicate more than a generic affinity between the different classes of individuals giving utterance to them. We also admit that there is a special adaptation of man's vocal apparatus for the formation of articulate sounds, but we deny that there is any satisfactory proof that the adjustment is of such a kind as to lead to a *natural and untaught* manifestation of the power of using speech as a sign of thought, or to account for the universality of the phenomenon on the supposition that the races had separate origins. If, then, the allegations in the passage just cited respecting the identity or close affinity of the notes of different species of the same family were undeniable (Dr. Bachman proves to our satisfaction that

they are very far from being so),* the fact would avail nothing in this controversy, since it is not the identity of intonation, nor the power of making similar articulate sounds, *but the common agreement* in making, by a purely arbitrary system, certain sounds to represent the same ideas, which identifies the human races as scions from a common stock.

And then the argument of Prof. Agassiz proves too much. If it accounts for the agreement in certain directions, it gains this apparent advantage only at the cost of leaving us the difficult, nay, impossible task, of accounting for differences which according to his theory ought not to exist. It is true that Agassiz seems to have anticipated this objection, and that he has set it aside in the most summary way, alleging, as we have seen, that the languages of the different races differ in the same proportions as their organs of speech are variously modified! If the Professor means to aver, as many persons unacquainted with Hu-

* J. Bachman, D. D. Charleston Medical Journal and Review, November, 1854, p. 798.

man Anatomy have been induced by the perusal of his remarks on this subject to believe, that the vocal organs of men of different races are characterized by *appreciable* differences of structure, we would respectfully ask, by whom have the observations been made which substantiate the fact and demonstrate a constant relation between such peculiarities of structure and the languages spoken by different races?

That the habitual employment from infancy of a certain class of sounds belonging to the native language of a people will be attended by an appropriate state of the vocal apparatus differing from that induced by the habitual use of a distinct class of sounds, we are free to admit; but surely Prof. Agassiz cannot seriously think that any such structural modifications of the vocal organs peculiar to races are any more persistent than other acquired peculiarities due to systematic culture. That such structural peculiarities of the vocal apparatus in the different races of man are not permanent, and therefore not in the least "indicative of primitive differences among them," we confidently

assert, and we cannot but be surprised that Prof. Agassiz should have given expression, even in the heat of argument while defending a theory, to a statement so entirely unsupported by facts.

Other advocates of the plural origin of man have assailed the unity-doctrine as maintained by all the best comparative philologists from a different point of attack. The *Westminster Review*, for April, 1856, in a notice of the "Types of Mankind," quotes the opinions of CRAWFURD, author of a "History of the Indian Archipelago," in opposition to the carefully digested views of the late Baron WILLIAM HUMBOLDT, who, in his celebrated "Analysis of the Kawi Language," demonstrated the unity of the tongues of the numerous types of mankind now generally designated as the Malayo-Polynesian races.

"The object," says the reviewer, "of Mr. Crawfurd's elaborate inquiry, which is conducted with great judgment and care, as well as learning, is the refutation of this hypothesis. In the opening of his labors, the author points

out that language is neither a test of race, nor invariably identical with race, and that there is no indication of such supposed parent language or people in the regions referred to. Mr. Crawfurd differs fundamentally from the German philologers, as to the number and kind of words to be selected as tests of a common tongue. Baron William Humboldt contented himself with a vocabulary of one hundred and thirty-four words, the synonyms of which he traced through nine languages, four out of which were Polynesian dialects, for the basis of his colossal hypothesis. The terms expressing the first and simplest ideas of mankind, are those, our author considers, from the familiarity and frequency of the ideas they express, to be the most amenable to adoption. The personal pronouns are equally objectionable tests, 'as they are the most interchangeable of all classes of words.' And the numerals must be excluded from early invented words, as they imply social advancement, and are the most likely words to be adopted by savages. The words chosen by our author, as tests of a unity

of languages, are those indispensable to their structure, without which they cannot be spoken or written—'the prepositions, which represent the cases of languages of complex structure; and the auxiliaries which represent times and moods.' 'After as careful an examination as I have been able to make of the many languages involved in the present inquiry, and duly considering the physical and geographical character of the wide field over which they are spoken, with the social condition of its various inhabitants, I have come to the conclusion that the words which are common to so many tongues, have been chiefly derived from the languages of the most civilized and adventurous nations of the Archipelago—the Malays and Javanese people very nearly allied. In truth, these Malays are the maritime and commercial people of the great Indian and Pacific oceans, who have penetrated everywhere for ages, who are known as traders and marauders in New-Guinea and New-Caledonia, as well as all intermediate islands, and whose enterprise and daring scarcely acknowledge any limits.

And it is words from their language which have been introduced into all the others: frequently, it must be acknowledged, to express ideas entirely new to the people who have adopted them. Malay, therefore, is the great common element pervading, in various degrees, all the languages spoken in the vast regions we have described, whose introduction is nearly as easy to understand as it is to account for the English terms in the native languages of North America, Australia, or other countries to which English commerce and colonization have extended.'"*

We have quoted the foregoing remarks both because we desire to present a fair statement of the argument of our opponents, and because they serve to show that the extraordinary doctrine of Prof. Agassiz on the *natural analogies of languages* is not relied upon even by those who agree with him in believing that the races of men are of distinct origins. Mr. Crawfurd and the Westminster reviewer grant that verbal coïncidences, if properly chosen, may be

* Westminster Review, April, 1856, p. 207.

tests of unity, the main difference between them and the great lights of comparative philology having respect to the particular kind of words whose occurrence in several different languages would indicate the unity or common origin of the latter. We have just seen what are the peculiar views of Mr. Crawfurd as indorsed by the reviewer. We think it a significant fact, as serving to indicate the bias under which, it is probable, the views of Mr. Crawfurd were formed, that he lays great stress upon "the physical and geographical character of the wide field over which they (the languages of the Malayo-Polynesian races) are spoken." In a word, it is apparent that he had formed an opinion as to the diversity of races inhabiting "the wide field" of the Indian Archipelago, prior to his inquiries into the value of linguistic affinities, and thus that his views on this latter topic, at variance as they are in many important respects with those of the most reliable philologists of the age, were determined by circumstances which denoted a foregone conclusion. We do not charge any unfairness in this. It

was perfectly legitimate to consider "the physical and geographical character of the wide field over which the languages were spoken and the social condition of its various inhabitants," in investigating the source of the verbal coïncidences detected in so many languages; but we are fully satisfied that his mind received a wrong bias from the exaggerated estimate he formed of the difficulties in the way of accepting the doctrine of the unity of these races, presented by the wideness of the field over which they were dispersed in isolated islands, some of which were separated from the rest by hundreds of miles of ocean; and that under the influence of this prejudice he set about seeking for some other explanation of the verbal coïncidences in their languages than that which rests upon a belief in their common origin; although, with singular inconsistency, he finally adopts an explanation which supposes precisely that very dispersion of one race, the presumed impossibility of which has led to the rejection of the doctrine of a common origin, and had given rise to the untenable hypothesis

of each subordinate race being an autochthon of the special area within which it was mainly circumscribed.

From the almost contemptuous way in which the Westminster reviewer speaks of Baron W. Humboldt, one would suppose that this great scholar had actually no other basis for his "colossal hypothesis," as the reviewer terms it, of the unity of the Malayo-Polynesian dialects, than the discovery of the synonyms of one hundred and thirty-four words in nine languages, words, too, of a character the most reliable to be adopted from abroad. Now let us hear what a competent and trustworthy judge has pronounced with reference to this very work of the great philologist: "By a rare combination of philosophical thought," says the Chevalier BUNSEN, himself standing in the very front rank of the comparative philologists of the age, "philological accuracy, and of linguistic research, a method had been established for analyzing a given language, and detecting its affinities with another of the same family. By this process, in the Semitic, and still more in Ja-

phetic languages, the general observations of preceding philosophers on the characteristics and the relative advantages or imperfections of the languages of mankind had become entirely obsolete, being partly incomplete and partly erroneous, and all inaccurate, scientifically speaking. The great desideratum, then, was, that more accurate reflections should be made on those points by an eminent philosophical mind, with a full knowledge of all the modern discoveries. This want has been supplied in an admirable manner by the *immortal posthumous work of* William von Humboldt, the introduction to his analysis of the Kawi language. The title of this introduction is, 'On the Diversity of the *Constructions* of Human Language, and its Influence on the Intellectual Development of Mankind.' Beginning with the simplest elements of speech, the illustrious author gradually proceeds to the construction of a sentence, as the expression of intellect and thought," etc.

"The researches of this work belong to the *calculus sublimis* of Linguistic theory. It places Wilhelm von Humboldt's name in universal

comparative ethnologic philology by the side of that of Leibnitz."*

Let us now inquire what is the kind of words usually adopted, as tests of a unity of tongues, by the most careful and profound philologists, and so summarily rejected by Mr. Crawfurd and the Westminster reviewer. It will be seen that the Humboldts, the Bunsens, the Müllers, and others who are the acknowledged heads in this department of ethnological inquiry, have by no means ignored the influence on languages resulting from the frequent or occasional intercourse of the races by which they were respectively spoken.

Thus, Dr. Prichard, in one of the latest productions from his pen,—an elaborate "Report on the various methods of research which contribute to the advancement of Ethnology, and of the relations of that science to other branches of knowledge; read before the British Scientific Association in 1847,"—expressly notices, and appreciates at its true value, the influence

* Report of the British Association for the Advancement of Science, 1847, pp. 163–4.

of commercial and other kinds of intercourse in introducing words from one tongue into another ; and it is only where the circumstances exclude this explanation that another interpretation is put upon peculiar verbal coïncidences. "Glottology," which, though an uncouth word, he considers a better expression than "Philology," as this latter has also another signification, "may be regarded almost as a new department of knowledge, since, although long ago sketched out and pursued to a certain extent, it has been wonderfully augmented in recent times ; and it is only through its later development that it comes to have any extensive relations with ethnology. Leibnitz is generally considered to have been its originator. The Adelungs, Vater, Klaproth, Frederick Schlegel, Bopp, and Jacob Grimm, have been among its most successful cultivators ; and lastly, to William von Humboldt it owes its greatest extension and the character of a profound philosophical investigation. But it is not in this light that we have now to consider the results of philological researches. It is as an auxiliary to history, and as serving in

many instances to extend, combine, and confirm historical evidence respecting the origin and affinities of particular nations, that the comparison of languages contributes to the advancement of ethnology. If ever we venture on the testimony of such relationship between languages as giving proof of ancient kindred between nations, it must be when historical considerations render the conclusion in itself probable, or indicate that it affords the most natural explanation of the phenomena observed. Great caution is requisite in drawing inferences of this kind, *since we cannot always conclude that nations belong to the same race from resemblance or identity in their speech*. We know that conquests followed by permanent subjugation have caused the people of some countries to lose their own languages and adopt those of their conquerors. The intercourse of traffic between different countries, the introduction of a new religion and new habits of life, especially when rude and barbarous tribes have been brought into near connection with civilized ones, have given rise to great modifications in many languages.

It is only when we have good reason to believe that the resemblances between the idioms of any particular nations have arisen from no similar causes, that we are justified in founding on such phenomena an argument in favor of their affinity in descent. The reasons which may determine us to entertain this opinion may be of two kinds; they may either arise from a consideration of the local position and previous history of the tribes of people who are the subjects of our inquiry, or they may turn *on the particular sort of resemblance or analogy discovered in their languages.*

"In the first place, if we learn from history that any two nations have been remotely separated from each other from a very distant age, and have never been brought into intercourse, we may hence argue that the marks of resemblance discovered in their languages can bear no other explanation than that of unity of descent. On this ground *we infer without doubt* the common origin of the Polynesian Islanders and that of the Greeks, and Germans, and the Arian race of Hindustan. Secondly, phenomena

are discoverable in languages themselves, which enable us to determine whether traits of resemblance detected in their comparison were produced by intercourse between nations, or arose in the gradual development of their languages, and thus prove a common origin in the tribes of people to which these languages belong. Analogies from which this last inference *may be fairly drawn* have in many instances been detected between languages which have acquired in the lapse of time such differences, that one dialect was unintelligible to people who spoke another idiom of the same stock. The following observations will perhaps explain as briefly as possible the principles which have either been expressed or followed tacitly by philologists who have entered upon such inquiries.

"It is the prevalent opinion of philologists that the most extensive relations between languages and those which are the least liable to be effaced by time and foreign intercourse, are the fundamental laws of construction both in words and sentences. Grammatical construction, or the rules which govern the relations of

words in sentences, appears to be very enduring and constant, *since a similar construction prevails through whole classes of languages which have few words in common, though they appear originally to have had more.* But beyond this there is a cognate character in words themselves, which sometimes pervades the entire vocabulary of a whole family of languages, the words being formed in the same manner and according to the same artificial rule. This may be exemplified in the monosyllabic structure of the Chinese and Indo-Chinese languages, and by the principle of the vocalic harmony pervading the languages of High-Asia, and perhaps by the dissyllabic structure of roots in the Syro-Arabian languages. Of grammatical analogy or similarity in the laws of construction of words in sentences, including the rules of inflection, we have examples in the languages of the aboriginal American nations, but perhaps the most remarkable specimen is to be found in the grammatical system of the Indo-European languages." *

* Report of the British Association for the Advancement of Science, for 1847, pp. 239, 240.

He then proceeds to point out the particular classes of words which resemble each other in languages of a common origin, and to show that they are generally different in kind from those which one nation borrows from its neighbors. For "even where one people has derived from another a considerable proportion of its entire stock of words, there generally remains an indigenous or aboriginal vocabulary, or, if I may use the expression, a homebred speech, consisting of such words as children learn in early infancy, and in the first development of their faculties. This domestic vocabulary consists of the words of first necessity, such as those denoting family relations, 'father,' 'mother,' 'child,' 'brother,' 'sister;' secondly, words denoting various parts of the body; thirdly, names of material and visible objects and the elements of nature, the heavenly bodies, etc.; fourthly, names of domestic animals; fifthly, verbs expressive of universal bodily acts, such as, 'eat,' 'drink,' 'sleep,' 'walk,' 'talk,' etc.; sixthly, personal pronouns, which are found to be among

the most durable parts of a language; seventhly, numerals, especially the first ten, or at least the first five, for many nations appear to have borrowed the second five in the decade. As no human family was ever without its stock of such words, and as they are never changed within the narrow domestic circle for other and strange words, they are almost indestructible possessions, and it is almost only among tribes who have been broken up and enslaved, so that the family relations have been destroyed, that this domestic language can have been wholly lost. Tribes and families separated from each other have been known to have preserved such similar words for thousands of years in a degree of purity that admitted of an easy recognition of this sign of a common origin."

It will be observed that Mr. Crawfurd and the *Westminster Review* are directly at issue with the great body of modern philologists, whose opinions are represented in the report of Dr. Prichard, as to the kind of words which are least likely to be effaced by time and foreign intercourse. Let it also be observed that the principles an-

nounced by the former are purely gratuitous and assumed to meet a case, while those so perspicuously expounded by Dr. Prichard result from a rigorous induction based on a most careful study of all the known languages of man.

On this point, and incidentally on the general question of the unity of races, we have the weighty testimony of the most illustrious of living savans, Baron ALEXANDER VON HUMBOLDT.

"Languages compared together and considered as objects of the natural history of the mind, and when separated into families according to the analogies existing in their internal structure, have become a rich source of historical knowledge; and this is probably one of the most brilliant results of modern study in the last sixty or seventy years. From the very fact of their being products of the intellectual force of mankind, they lead us, by means of the elements of their organism, into an obscure distance, unreached by traditionary records. The comparative study of languages shows us that races now separated by vast tracts of land, are allied to-

gether, and have migrated from one common primitive seat; it indicates the course and direction of all migrations, and, in tracing the leading epoch of developments it recognizes, by means of the more or less changed structure of the language, in the permanence of certain forms, or in the more or less advanced distinction of the formative system, *which* race has retained most nearly the language common to all who had migrated from the general seat of origin."

"The largest field for such investigations into the ancient condition of language, and consequently into the period when the whole family of mankind was, in the strict sense of the word, to be regarded as one living whole, presents itself in the long chain of Indo-Germanic languages, extending from the Ganges to the Iberian extremity of Europe, and from Sicily to the North Cape."

"From these considerations and the examples by which they have been illustrated, the comparative study of languages appears an important rational means of assistance by which scientific and genuinely philological investiga-

tion may lead to a generalization of views regarding the affinity of races, and their conjectural extension in various directions from *one common point of radiation.*"*

We add, on account of its striking and popular style of illustration, the testimony of another eminent scholar of Germany, Dr. MAX MÜLLER, who has successfully investigated the relations of the languages of India. "The evidence of language," says this competent witness, "is irrefragable, and it is the only evidence worth listening to, with regard to antehistorical periods. It would have been next to impossible to discover any traces of relationship between the swarthy nations of India and their conquerors, whether Alexander or Clive, but for the testimony borne by language. What authority would have been strong enough to persuade the Grecian army that their gods and their hero ancestors were the same as those of King Porus, or to convince the English soldier that the same dark blood was running in his veins and in those of the dark Bengalee? And

* Cosmos. Otté's Translation, Vol. II., pp. 111, 112.

yet there is not an English jury nowadays which, after examining the hoary documents of language, would reject the claim of a common descent and a legitimate relationship between Hindu, Greek, and Teuton. Many words still live in India and in England that have witnessed the first separation of the northern and southern members of the Arian family; and these are witnesses not to be shaken by any cross-examination. The terms for God, for house, for father, mother, son, daughter, for dog and cow, for heart and tears, for axe and tree—*identical in all the European idioms*—are like the watch-words of soldiers. We challenge the seeming stranger; and whether he answer with the lips of a Greek, a German, or an Indian, we recognize him as one of ourselves. Though the historian may shake his head, though the physiologist may doubt, and the poet scorn the idea, all must yield before the fact furnished by language."*

* We are indebted to an able article in the *Southern Quarterly Review*, for January, 1855, for the above extract from the writings of Dr. Max Müller, to none of which have we had direct access, except a lecture delivered before the British Scientific Association, in 1847,

The valuable and interesting essay by the Chevalier BUNSEN, to which reference has been made, contains numerous other passages which it would give us satisfaction to lay before our readers, but we must content ourselves with a few selections. The paper referred to is an elaborate "Report," read before the Ethnological section of the British Association for the Advancement of Science, at Oxford, in June, 1847, "On the Results of the recent Egyptian Researches, in reference to Asiatic and African Ethnology, and the Classification of Languages.'

Referring to the forms, formative words and inflexions of the Egyptian language, in their natural order and connection, and to the "Egyptian roots which can be proved to have formed the heirloom of that nation, as they occur in monuments not more recent than the time of Moses, and in great part anterior to him by a thousand years and more," Bunsen says: "It is impossible to look on those forms

"On the Relations of the Bengali to the Arian and Aboriginal Languages of India."

and on those roots, with even a superficial knowledge of the Semitic and Indo-Germanic languages, and not to perceive that the Egyptian language is no more a Hebrew than a Sanscrit dialect, but that it possesses an affinity with each of them, such as compels us to ask the question, whether it is a more ancient formation than either or no? This question becomes the more interesting and important, when it must be considered as demonstrated that such an affinity cannot be explained by mere internal analogy; that, on the contrary, it is historical in the strictest sense of the word,—namely, *physical*, or original. I mean that the affinity alluded to cannot rationally be explained by a real or supposed general analogy of languages, as the expressions of human thought or feeling, nor by the later influence of other nations and tongues. Now the Egyptian name of Egypt is *Chêmi*, the land of *Cham*, which in Egyptian means black. Can we, then, have really found in Egypt the scientific and historical meaning of Cham, as one of the tripartite divisions of post-diluvian

humanity? The Egyptian language attests a unity of blood with the great Aramaic tribes of Asia, whose languages have been comprised by scholars under the general expression of Semitic, or the languages of the family of Shem. It is equally connected by identity of origin with those still more numerous and illustrious tribes which occupy now the greatest part of Europe, and may, perhaps, alone or with other families, have a right to be called the family of Japhet. I mean that great family to which the Germanic nations belong, as well as the Greeks and Romans, the Indians and Persians, the Sclavonic and the Celtic tribes, and which are now generally called by some the Indo-Germanic, by others the Indo-European nations."

"I take it for granted that the facts to which I allude bear out the consequence I deduce from them; I mean, the assertion that the affinity of the Egyptian forms and roots with those of the Semitic and Indo-Germanic languages, is one which can no more be explained by the general similarity existing, or supposed

to exist between different languages, than that between German and Scandinavian, between Greek and Roman, between Gothic and Sanscrit, *which is disputed by nobody who has a right to speak on these subjects.* I glory in belonging to a school which rejects altogether those etymological dreams and conjectures, those loose comparisons of languages, or rather of words, caught at random, which made the etymologies of the seventeenth century the laughing-stock of the eighteenth. By its very principle, the critical school admits of no claim to historical affinity between different languages, unless this affinity be shown to rest upon definite laws, upon substantial analogy, established by a complete examination of the materials. *That school demands the strictest proof that these affinities are neither accidental nor merely ideal, but essential; that they are not the work of extraneous intrusion, but indigenous, as running through the whole original texture of the languages, compared according to a traceable rule of analogy. The very method of this critical school excludes the possibility of accidental or*

*mere ideal analogies being taken for proofs of a common historical descent of different tribes or nations.*"

"It was LEPSIUS who, in his most acute essay, 'On the Egyptian Numerals,' first showed the deeply-rooted radical analogy which the ancient roots of the language of Egypt bear on the one side to the Indo-Germanic family, on the other to the Semitic."

This is the identical Lepsius with whom the authors of "Types of Mankind" corresponded by letter, and on whose name they continually ring the changes, whenever they wish to exhibit his views on Egyptian chronology in contrast with the Hebrew chronology as interpreted by Usher, Hales, etc. Well may Bunsen add: "That the strict historical connection between the language of Egypt and those of the Semitic and Iranian tribes *is no longer a matter of controversy* among those who have studied these languages according to the principles of the critical school."

"The theories about the origin of language have followed those about the origin of thought,

and have shared their fate. The materialists have never been able to show the possibility of the first step. They attempt to veil their inability by the easy but fruitless assumption of an infinite space of time, destined to explain the gradual development of animals into men; as if millions of years could supply the want of the agent necessary for the first movement, for the first step in the line of progress! No numbers can effect a logical impossibility. How, indeed, could reason spring out of a state which is destitute of reason? How can speech, the expression of thought, develop itself in a year, or in millions of years, out of unarticulated sounds, which express feelings of pleasure, pain, and appetite?"

"We disclaim the savage as the prototype of natural, original man. For linguistic inquiry shows that the languages of savages are degraded, decaying fragments of nobler formations. The language of the Bushman is a degraded Hottentot language, and this language is likely to be only a depravation of the noble Kafre tongue."

In a well-considered train of reflection, he points out the almost inevitable consequences of an original diversity of languages, and contrasting this imaginary state with the actual facts as exhibited by the results of researches in comparative philology, argues with irresistible force against the theory of any such original diversity.

"On the supposition of this original diversity, the different languages, however analogous they might be as the produce of the working of the same human mind on the same outward world by the same organic means, would nevertheless offer scarcely any affinity to each other in the skill displayed in their formation, and in the mode of it; but their very roots, full or empty ones, and all their words, must needs be entirely different. There may be some similar expressions in those inarticulate bursts of feelings, not reäcted upon by the mind, which the grammarians call interjections. There are, besides, some graphic imitations of external sounds, called onamatopoetica, words the formation of which indicates the relatively greatest

passivity of the mind. There may be, besides, some casual coïncidences in real words; but the law of combination applied to the elements of sound gives a mathematical proof that, with all allowances, that chance is less than one in a million for the same combination of sounds signifying the same precise object.* . . . Now, referring to what we have already stated, as the result of the most accurate linguistic inquiries, such a coïncidence does exist between three great families, spreading from the north of Europe to the tropic lands of Asia and Africa. It

* Dr. Young applied the mathematical test of the calculus of probabilities to the inquiry, "what number of words found to resemble one another in different languages will warrant our concluding them to be of common origin?" and arrived at the following results: "Nothing whatever can be inferred with respect to the relation of any two languages, from the coïncidence of sense of any single word in both of them: the odds would be three to one against the agreement of any two words; but if three words appear to be identical, it would be then more than ten to one that they must be derived in both cases from some parent language, or introduced in some other way: six words would give more than seventeen hundred chances to one, and eight, near one hundred thousand; so that, in these cases the evidence would be little short of absolute certainty. In this way conclusive evidence has been furnished that the family of American languages has had a common origin with those of Asia. A lexical comparison has established an identity in one hundred and seventy words, although this study is yet in its infancy; and this, relying on the correctness of Dr. Young's mathematical calculation, is an argument which cannot be controverted." (SMYTH. Unity of the Human Races.)

there exists not only in radical words, but even in what must appear as the work of an exclusively peculiar coinage, the formative words and inflexions which pervade the whole structure of certain families of languages, and are interwoven, as it were, with every sentence pronounced in every one of their branches. *All the nations which from the dawn of history to our days have been the leaders of civilization in Asia, Europe, and Africa, must consequently have had one beginning. This is the chief lesson which the knowledge of the Egyptian language teaches.*"

In the concluding paragraphs of this interesting Report, the learned author makes a brief reference to the difficult problem presented by the Chinese language; and after announcing his unhesitating belief in the existence of a primitive connection between that and other formations, ends with these words:

"We flatter ourselves that we have made good our assertion, that Egyptologic discoveries are most intimately connected with the great question of the primeval language and civilization of mankind, both in Asia and Africa, and

that they give a considerable support to the opinion of the high, but not indefinite antiquity of human history, and to the hypothesis of the original unity of mankind, and of a common origin of all the languages of the globe."

The reader cannot have failed to observe with what caution and care the conclusions of Bunsen have been formed, and how, whenever there is the least room for doubt, he hesitates to dogmatize. Since the date of the paper from which the above extracts are taken, considerable progress has been made towards a satisfactory demonstration of points in regard to which a more or less probable statement only could then be made. For example, Bunsen, availing himself of the elaborate analysis by Müller of the "Turanian" languages, by means of which analysis all these dialects had been found "to converge toward the same centre of life," has been enabled to bring the languages of the North American Indians into the same category. "The linguistic data," he says, "thus furnished, combined with the traditions and customs, and particularly with the system of mnemonics (first

revealed in Schoolcraft's work), enable me to say that the Asiatic origin of all these tribes is as fully proved as the unity of family among themselves."

The unity thus made out for all the families of the earth, "is not simply a physical, external one ; it is that of thought, wisdom, arts, science, and civilization. By facts still more conclusive than the succession of strata in geology, comparative philology proves what our religious records postulate, that the civilization of mankind is not a patchwork of incoherent fragments, not an inorganic complex of various courses of development, starting from numerous beginnings, flowing in isolated beds, and destined only to disappear in order to make room for other tribes running the same course in monotonous rotation. Far beyond all other documents, there is preserved in language that sacred tradition of primeval thought and art which connects all the historical families of mankind, not only as brethren by descent, but each as the depository of a phasis of one and the same development." *

* Bunsen's "Christianity and Mankind." Vol. IV., p. 126.

We have thought it best, in the discussion of the philological aspect of the general subject, to let philologists speak for themselves, instead of running the risk of marring the argument by an analysis of our own, especially in view of the fact that the papers of Dr. Prichard and the Chevalier Bunsen, from which our principal extracts are taken, presented a perspicuous and at the same time a popular exposition of the principles on which the argument should be based, and that too in so compendious form as to preclude abridgment, except in the way of selecting extracts.

# CHAPTER III.

## OBJECTIONS TO THE DOCTRINE OF THE COMMON PARENTAGE OF THE HUMAN RACES CONSIDERED.

### § 1.

### *Difficulties connected with the actual Geographical Distribution of the Races.*

HAVING shown the insufficiency of Prof. Agassiz' arguments in favor of the doctrine of distinct origins for the typical races of men, and having in the last chapter indicated the striking significance of facts derived from comparative philology in proof of the counter hypothesis of a common parentage for all human tongues and races, we now propose to consider some of the popular objections occasionally raised against this latter doctrine.

The first of these to which we shall direct our attention has reference to the existing geographical distribution of the races, and the adaptation of each indigenous race to its climate and country. It is held by some to be inconceiv-

able that human beings born in genial climes should have found any adequate inducement to select for their permanent home the inhospitable regions of the frigid zone, or the pestiferous soil of tropical Africa. It was considered equally improbable that men ignorant of the art of navigation should have braved the dangers of the ocean and have succeeded in reaching the shores of America, Australia, and the numerous and widely-separated islands of the Pacific. We propose to set aside these objections to the time-honored doctrine of our fathers respecting the single origin of our race.

We have already shown that observant naturalists have succeeded, to a considerable extent, in elucidating the laws regulating the variations undergone by species which are very widely distributed, and which for this very reason are subjected to a great variety of external influences. Setting aside the human races, "the best authenticated examples of the extent to which species can be made to vary may be looked for in the history of domesticated animals and cultivated plants. It usually hap-

pens that those species, both of the animal and vegetable kingdom, which have the greatest pliability of organization, those which are most capable of accommodating themselves to a great variety of new circumstances, are most serviceable to man. These only can be carried by him into different climates, and can have their properties or instincts variously diversified by differences of nourishment and habits."*

Now we contend that the undoubted power possessed by the various races of men and by the domesticated animals to undergo acclimation in every quarter of the globe, not only indicates the possibility that the former may have sprung from a common origin, but, apart from all other considerations, furnishes a strong presumption in favor of this conclusion. For, as our readers will doubtless have inferred from the remarks of LYELL in the foregoing extract, it is contrary to the usual course of nature to multiply congeneric species, among the higher animal classes, in adaptation to varying external conditions, when a single species is endowed

* Lyell's Principles of Geology. 8th ed. London, 1850. P. 561.

with a latitude of accommodation to circumstances.

This view, as bearing upon the history of man's dispersion from his original birthplace, is strengthened by the remarkable fact that the country usually regarded as the seat of man's creation, and consequently as the centre whence all the families of the earth have radiated, is also "the native country of nearly all the grains, vegetables, fruits, and animals which have been transported by man in his wide migrations, and have supplied him with the comforts and luxuries of life. It is the native country of rice, wheat, pulse, and the vine, now everywhere in common use. There, also, nearly all the animals are found in a wild state which have been domesticated, and all but the camel have been carried with him over the whole inhabitable world. These animals are the ass, goat, sheep, cow, horse, pig, dog, cat, etc. Those that were subsequently domesticated were from other countries, and their origin can be traced without difficulty."*

* J. Bachman, D. D. On the Unity of the Human Race, etc. Charleston, 1850, p. 171.

It has been alleged, however, that the natives of tropical and Arctic countries could not exchange residences without mutual destruction. We reply, that it will depend on the degree of caution which is observed in undergoing gradual acclimatization. It is freely admitted that neither man nor his faithful companions, enjoying a like latitude of accommodation to varying external circumstances, could be safely transported at once from one climate to its opposite extreme. We have adverted in another connection to the gradual acclimatization, requiring more than one generation for its accomplishment, that took place among the dogs carried from England into the attenuated atmosphere of the high table-land of Mexico. A case still more in point is mentioned by Dr. Bachman, who says:

"We believe we were the first to attempt to introduce what is called the Muscovy duck into the northern part of the State of New York. These, birds which we had received from the south, were so sensitive to cold, being natives of Brazil, that several were frozen to death

during the first winter, and the remainder were preserved in a warm room; their successors, however, after the third generation, were constitutionally enabled to live in the poultry-yard during the coldest winters. The red fox is possessed of a decidedly northern constitution, being found within the Arctic circle. About forty years ago his farthest southern limit was Pennsylvania. A wealthy gentleman residing on John's island, near Charleston, imported, a few years ago, from New York, a number of these foxes, and turned them loose on the island, where there was an abundance of food, and where they were left unmolested; the transition, however, was too sudden for their northern constitutions; they scarcely multiplied, and in a few years disappeared. *In the meantime, however, a more natural migration and acclimatization was in progress. The red fox made its appearance in the more elevated parts of Virginia; there it multiplied so rapidly that it has in certain localities become more common than the grey fox. The migrations towards the South continued with increasing and unaccountable*

*rapidity. It was soon after found in North Carolina, then in South Carolina, and we ascertained, on a visit to Georgia last summer, that it was multiplying rapidly, not only in the higher but middle portions of that State.*"*

In the same manner the grey fox, *Vulpes virginianus*, which is a southern species, has been slowly migrating northward, until now it is found in the Canadas.

Why human beings should have ever directed their wanderings to the regions of perpetual winter, we do not think it necessary to inquire. We will, however, venture to remark that, since the plan of God's wise providence has included the partial occupation by man of these inhospitable climes, there is no more difficulty in conceiving that He may have effected this by disposing a portion of His rational creatures to select such a home than there would be in recognizing His power to create a distinct "type" of mankind as an autochthon of the soil. Indeed, the difficulty is far less; since the former supposition accords with the ordinary modes of

* J. Bachman. Op. cit., p. 274.

God's providential action with respect to His rational creatures, while the counter hypothesis involves the idea of an apparently needless repetition of the stupendous miracle of creation. We cannot, therefore, but be surprised that any well-informed naturalist should cite the case of the Esquimaux natives of the Arctic realm being able to stand out with uncovered heads in the open air, as a proof that the race was created in that region. Nor does the other difficulty, which has been referred to, give us any serious embarrassment. In the absence of all historical records of the early migrations of the human family we can hope to show only how the dispersion from a single centre *may* have taken place. The general question of the possibility of such a dispersion has been treated with masterly ability by LYELL, while PICKERING, SCHOOLCRAFT, Lieut. MAURY, and others, have exhibited special facts bearing on the question of the origin of the aborigines of our continent, and the route by which they accomplished their transit from the Eastern to the Western World,—a question presenting, we may observe, quite as much

difficulty as that which refers to the origin of any other people on the globe.

"In an early stage of society," says LYELL, "the necessity of hunting acts as a principle of repulsion, causing men to spread with the greatest rapidity over a country, until the whole is covered with scattered settlements. It has been calculated that eight hundred acres of hunting-ground produce only as much food as half an acre of arable land. When the game has been in a great measure exhausted, and a state of pasturage succeeds, the several hunter tribes, being already scattered, may multiply in a short time into the greatest number which the pastoral state is capable of sustaining. The necessity, says Brand, thus imposed upon the savage states, of dispersing themselves far and wide over the country, affords a reason why, at a very early period, the worst parts of the earth may have been inhabited."*

Having thus indicated the probable determining cause of man's early migrations, and the

* Lyell. Op. cit., p. 398.

process by which they were effected, in as far as regards the peopling of a continuous continent, he proceeds to point out the methods by means of which isolated islands and distant continents may have been reached by wandering tribes:

Cook, Forster, and others, have remarked that parties of savages in their canoes must have often lost their way, and must have been driven on distant shores, where they were forced to remain, deprived both of the means and of the requisite intelligence for returning to their own country. Thus Captain Cook found, on the island of Wateoo, three inhabitants of Otaheite, who had been drifted thither in a canoe, although the distance between the two isles is 550 miles. In 1696, two canoes, containing thirty persons, who had left Ancorso, were thrown by contrary winds and storms on the island of Samar, one of the Philippines, at a distance of 800 miles. In 1721, two canoes, one of which contained twenty-four, and the other six persons, men, women, and children, were drifted from an island called Farroilep to

the island of Guaham, one of the Marians, a distance of 200 miles.

"Kotzebue, when investigating the Coral Isles of Radack, at the eastern extremity of the Caroline Isles, become acquainted with a person of the name of Kadu, who was a native of Ulea, an isle 1500 miles distant, from which he had been drifted with a party. They drifted about the open sea for eight months, according to their reckoning by the moon, making a knot on a cord at every new moon. Being expert fishermen, they subsisted entirely on the produce of the sea; and when the rain fell, laid in as much fresh water as they had vessels to contain it."

After detailing other well-authenticated facts of a similar character, Sir CHARLES LYELL proceeds to say:

"The space traversed in some of these instances was so great, that similar accidents might suffice to transport canoes from various parts of Africa to the shores of South America, or from Spain to the Azores, and thence to North America; so that man, even in a rude state of society, is liable to be scattered invol-

untarily by the winds and waves over the globe, in a manner singularly analogous to that in which many plants and animals are diffused. We ought not, then, to wonder that, during the ages required for some tribes of the human family to attain that advanced stage of civilization which empowers the navigator to cross the ocean in all directions with security, the whole earth should have become the abode of rude tribes of hunters and fishers. *Were the whole of mankind now cut off, with the exception of one family, inhabiting the old or new continent, or Australia, or even some coral islet of the Pacific, we might expect their descendants, though they should never become more enlightened than the South-sea Islanders or the Esquimaux, to spread in the course of ages over the whole earth, diffused, partly by the tendency of population to increase, in a limited district, beyond the means of subsistence, and partly by the accidental drifting of canoes, by tides and currents to distant shores.*"

This conclusion, it will be observed, is the result of a rigid induction from undeniable facts, which were not collected with the view of

strengthening opinions previously adopted as a matter of religious faith; for, as is well known, Sir CHARLES LYELL does not recognize the authority of the Bible in matters of science.

The recent testimony of Lieut. MAURY is strongly corroborative of the views of Sir Charles Lyell, while, at the same time, it indicates the probable origin of our American Indians, and the route by which, drifting *eastward*, they reached this western continent. The testimony is found in the replies of Lieut. Maury to a series of questions addressed to him by Mr. SCHOOLCRAFT, who introduces them in his magnificent work, with the following explanatory remarks:

"The tradition of the origin of the empire (the old Mexican) in bands of adventurers from the 'Seven Caves,' rests upon the best authority we have of the Toltec race, supported by by the oral opinion of the Aztecs in 1519.* An examination of it by the lights of modern geo-

* See Report of the British Scientific Association—Dublin Meeting, 1837. Paper by Rear Admiral Fitz Roy, p. 130.—"all aboriginal tribes have been found by travellers and the learned to derive their origin more or less directly from Central Asia."

graphy, in connection with the nautical theory of oceanic currents and the fixed courses of the winds in the Pacific, gives strong testimony in favor of an early expressed opinion in support of a migration in high latitudes. It is now considered probable that those caves were seated in the Aleutian chain of islands. This chain connects the continent of Asia and America at the most practicable points; and it begins precisely opposite to that part of the Asiatic coast north-east of the Chinese Empire, and quite above the Japanese group, where we should expect the Mongolic and Tata hordes to have been precipitated upon those shores. On the American side of the trajet, extending south of the Peninsula of Onalasca, there is evidence, in the existing dialects of the tribes, of their being of the same generic group with the Toltec stock. By the data brought to light by Mr. HALE, the Ethnographer to the United States Exploring Expedition under Captain Wilkes, and from other reliable sources, the philological proof is made to be quite apparent. The peculiar Aztec termination of substantives

in *tl*, which was noticed at Nootka sound, and which will be found in the specimens of the languages of Oregon, furnished by Mr. Wyeth, are too indicative, in connection with other resemblances in sound, and in principles of construction, noticed by Mr. Hale, to be disregarded. . . . Lieut. Colonel CHARLES HAMILTON SMITH, of Edinburgh, appears to have been the first observer to throw out the idea of the Chichimecs, a rude Mexican people of the Toltecan lineage, having migrated from this quarter, taking, however, the word 'caves' to be a figure denoting a vessel, catamaran, or canoe ; and not employing it in a literal sense. Lieut. MAURY, U. S. N., the chief director of the American Nautical Observatory at Washington, to whom I transmitted the work, with particular reference to this chapter, puts a more literal construction on the tradition of Quetzalcoatl (respecting the adventurers from the Seven Caves), and brings to bear an amount of modern observation on the point which it would be unjust to withhold from the reader."

We give such extracts only, from Mr. Maury's

letter, as bear specifically upon the question under consideration.

"Colonel Smith had a stronger case than he imagined. Referring to the Chichimec legend of the Seven 'Caves,' he conjectures that the Chichimecs might originally have been Aleutians, and that '*Caves*,' if not denoting islands, might have referred to canoes.

"The Aleutians of the present day *actually live in caves* or subterranean apartments, which they enter through a hole in the top.

"Those islands grow no wood. For their canoes, fishing implements, and *cave*-hold utensils, the natives depend upon the drift-wood which is cast ashore, much of which is *camphor* wood. And this, you observe, is another link in the chain—which is growing quite strong—of evidence which for years I have been seeking, in confirmation of a "gulf-stream' near there, and which runs from the shores of China over towards our north-west coast. . . . I'll answer as best I can your several interrogatories. 1st. You wish me to state whether, in my opinion, the Pacific and Polynesian waters

could have been navigated in early times—supposing the winds had been then as they now are—in balsas, floats, and other rude vessels of early ages.

"Yes; if you had a supply of provisions, you could 'run down the trades' in the Pacific on a log. There is no part of the world where nature would tempt a savage man more strongly to launch out upon the open sea with his bark, however frail. Most of those islands are surrounded by coral reefs, between which and the shore the water is as smooth as a mill-pond.

"In reply to your second question, as to the possibility of long voyages before the invention of the compass, I answer, that such *chance* voyages were not only possible, but more than probable. When we take into consideration the position of North America with regard to Asia, of New Holland with regard to Africa, with the winds and currents of the ocean, it would have been more remarkable that America should not have been peopled from Asia, or New Holland from Africa, than that they should have been. Captain Ray, of the whale-

ship Superior, fished two years ago in Behring's Straits. He saw *canoes* going from one continent to the other.

"Besides this channel, there is the 'gulf-stream,' like the current already alluded to, from the shores of China. Along its course westerly winds are the prevailing winds; and we have well-authenticated instances in which these two agents have brought Japanese mariners in disabled vessels over to the coast of America.

"Now look at the Indian Ocean, and see what an immense surface of water is exposed there to the heat of the torrid zone, without any escape for it, as it becomes expanded, but to the south. Accordingly, we have here the genesis of another 'gulf-stream' which runs along the east coast of Africa. The physical causes at work, were there not some such as the form of the bottom, the configuration of the land, opposing currents of cold water, etc., would give the whole of this current a south-easterly direction. We know that a part of it, however, comes into the Atlantic by what is

called the Lagullas current. The whales, whose habits of migration, etc., I am investigating, indicate clearly enough the presence of a large body of warm water to the south of New Holland. This is where the gulf-stream from the Indian Ocean ought to be ; and there I confidently expect, when I come to go into that part of the ocean with the thermometer, as we are preparing to do with our thermal charts, to find a warm current coming down from Madagascar and the coast of Africa. There was, then, in the early days, the Island of Madagascar to invite the African out with his canoe, his raft, or more substantial vessel. There was this current to bear him along at first at the rate of nearly, if not quite, one hundred miles a day, and by the time the current began to grow weak, it would have borne him into the regions of westerly winds, which, with the aid of the current, would finally waft him over to the southern shores of New Holland. Increasing and multiplying here, he would travel north to meet the sun, and in the course of time he would extend himself over to the other islands,

as Papua and the like. If I recollect aright, the Gallipagos Islands, though so near the coast and under line, with a fine soil and climate, were, when discovered, uninhabited. Now, that part of the coast near which they are, is peculiarly liable to calms and baffling winds, to the distance out to sea of several hundred miles; there was no current to drift nor wind to blow the native from the coast, and lodge him here. . . . . When we look at the Pacific, its islands, the winds and currents, and consider the facilities there that nature has provided for drifting savage man with his rude implements of navigation about, we shall see that there the inducements held out to him to try the sea are powerful. With the bread-fruit and the cocoa-nut—man's natural barrels there of beef and bread—and the calabash, his natural water-cask, he had all the stores for a long voyage already at hand. You will thus perceive the rare facilities which the people of those shores enjoyed in their rude state for attempting voyages."*

* History, Condition, and Prospects of the Indian Tribes of the United States, by H. R. Schoolcraft, LL. D. Part I, p. 26.

"Thus," says Mr. SCHOOLCRAFT, "we have traditionary gleams of a foreign origin of the race of North American Indians from separate stocks of nations, extending at intervals from the Arctic Circle to the Valley of Mexico. Dim as these traditions are, they shed some light on the thick historical darkness which shrouds that period. They point decidedly to a foreign—to an oriental, if not a Shemitic, origin. Such an origin has from the first been inferred. At whatever point the investigation has been made, the eastern hemisphere has been found to contain the physical and mental prototypes of the race. Language, mythology, religious dogmas—the very style of architecture, and their calendar, as far as it is developed, point to that fruitful and central source of human dispersion and nationality.

"It is no necessary consequence, however, of the principles of dispersion, that it should have been extended to this continent as the result of regular design. Design there may indeed have been. Asia and Polynesia, and the Indian Ocean, have abounded, for centuries,

with every element of national discord. Pestilence or predatory wars have pushed population over the broadest districts of Persia, India, China, and all Asia The isles of the sea have been the nurseries of nations. Half the globe has been settled by differences of temperature, oceanic currents, the search of food, thoughtless adventure, or other forms of what is called mere accident; and not proposed migrations. All these are so many of the ways of Providence, by which not only the tropical and temperate regions, but the torrid and arctic zones have been peopled. He must have read history with a careless eye, who has not perceived the work of human dispersion to have been promoted by the discords of various races, and the meteorology of the globe, as affecting its leading currents of winds and waves."*

Precisely similar views are expressed by Dr. PICKERING, Ethnologist to the United States Exploring Expedition, who appropriates a chapter of his work on the "Races of Men,

* History, Condition, and Prospects of the Indian Tribes of the United States, by H. R. SCHOOLCRAFT, LL.D. Part I., pp. 22–24.

and their Geographical Distribution," to a somewhat detailed notice of "Migrations by Sea." One section of this chapter is headed, "*The North Pacific*," and commences with these words:

"To persons living around the Atlantic shores, the source of the aboriginal population of America seems mysterious; and volumes have been written upon the subject. *Had the authors themselves made the voyage to the North Pacific, I cannot but think that much of the discussion would have been spared.*"*

Our quotations from SCHOOLCRAFT have been extended to such a length that we must forego the indulgence of a desire to give the testimony of Dr. Pickering in detail. Let it suffice to say, that he concurs in the opinions of Schoolcraft and Maury as to the Eastern origin of the American Indians, and as to the route by which they reached this continent on the Pacific coast.†

* Races of Men, and their Geographical Distribution, by C. PICKERING, Member of the United States Exploring Expedition. Bohn's edition, p. 296.

† Evidences of the temporary sojourn of the Aztecs on the borders of Lake Superior are believed to have been lately discovered, in local traditions, and especially in industrial remains disentombed at and near

It is no disparagement of the high renown of Prof. Agassiz as a naturalist to say that, on such a question, the value of his opinions must be held to be subordinate to those of thoughtful travellers, who, having the other qualifications, have also made "the voyage to the North Pacific," and have thus become cognizant, by personal observation, of all the data requisite for the solution of the problem. Sagacious and philosophical travellers who have pursued this inquiry are, we believe, nearly unanimous in their belief of the Mongolian origin of the American Indian. We wish it to be borne in mind, that if one part of the system so elaborately constructed by Professor Agassiz be thus disproved, the whole theory is brought under suspicion; and when part after part comes in like manner to be refuted, the system is, of

the copper mines of that region. The present Indian inhabitants knew nothing of the copper till the white men came there, and were astonished when it was demonstrated that a former race were acquainted with the mines. Now it is believed that this former and more civilized race has been identified with the Aztecs, who, having landed on the north-western shore of North America, settled on the shores of Lake Superior, until they were pushed forward by the more warlike Ojibways, leaving traces at various points in their progress southward until they reached Mexico.

course, utterly discredited. We may thus, in replying to the objections urged against the doctrine of a single origin for the human races, find "an easy way of carrying the war into Africa;" but really, it seems needless to add anything to the remarks made in a preceding chapter in noticing the gratuitous character of the hypothesis to which Prof. Agassiz has given his sanction.

## § 2.

### INTELLECTUAL AND MORAL DIVERSITIES OF RACES.

"The grand problem," according to one of the authors of 'The Types of Mankind,' "more particularly interesting to all readers, is that which involves the common origin of races; for upon the latter deduction hang not only certain religious dogmas, but the more practical question of the equality and perfectibility of races. Whether an original diversity of races be admitted or not, the *permanence* of existing physical types will not be questioned by any archæologist or naturalist of the present day;

nor by such competent arbitrators can the consequent permanence of moral and intellectual peculiarities of types be denied. The intellectual man is inseparable from the physical man ; and the nature of the one cannot be altered without a corresponding change in the other."

The same writer, Dr. J. C. Nott, has again made use of the same argument in the appendix to an American reprint of the interesting and suggestive essay of Count A. DE GOBINEAU, on the "Moral and Intellectual Diversity of Races." He regards "most of Count Gobineau's conclusions as incontrovertible." We are not prepared to dissent from this estimate of their value ; but we go further,—we adopt some very important ones which Dr. Nott rejects ; for it so happens that this very work contains a refutation of his views respecting either a specific distinction or a plural origin of the races, or, at least, it demonstrates the entire consistency of all the known facts relating to the intellectual diversities of race with the idea of their specific unity and common

descent. Assuming, on grounds which have been already stated,* that all mankind have sprung from a common parentage, the author contends that this fact is not inconsistent with the idea of permanent differences among the races, and justifies his position by referring to the analogous case of different children of the same parents. "If two men, the offspring of the same parents, can be the one a dunce, the other a genius, why cannot different races, *though descended of the same stock*, be different also in intellectual endowments?" "All that is here contended for is, that the distinctive features of such races, in whatever manner they have originated, are now persistent. Two men may, the one arrive at the highest honors of the state, the other with every facility at his command forever remain in mediocrity; yet these men may be brothers."

In an admirable chapter on the "Influence of Christianity upon the Moral and Intellectual Diversity of Races," the author avows with earnestness and force his unhesitating convic-

* Supra p. 88.

tion of the adaptedness of the Gospel of the Lord Jesus Christ to all, even the most hopelessly inferior, of the races. He speaks with indignant warmth of those writers who (like the authors of "Types of Mankind," he might have said,) "dare to contradict the sacred promise of the Gospel, and deny the peculiar characteristic of our faith, which consists in its accessibility to all men. According to them, religions are confined within geographical limits which they cannot transgress. But the Christian religion knows no degrees of latitude or longitude. There is scarcely a nation or a tribe among whom it has not made converts. Statistics,—imperfect, no doubt, but as far as they go, reliable—show them in great numbers in the remotest parts of the globe; nomad Mongols in the steppes of Asia, savage hunters in the table-lands of the Andes, dark-hued natives of an African clime, persecuted in China, tortured in Madagascar, perishing under the lash in Japan. But this universal capacity of receiving the light of the Gospel must not be confounded, as is often done, with a faculty of

entirely different character, that of social improvement. This latter consists in being able to conceive new wants, which, being supplied, give rise to others, and gradually produce that perfection of the social and political system which we call civilization. While the former belongs equally to all races, whatever may be their disparity in other respects, the latter is of a purely intellectual character, and the prerogative of certain privileged groups, to the partial or even total exclusion of others. With regard to Christianity, intellectual deficiencies cannot be a hinderance to a race. Our religion addresses itself to the lowly and simple, even in preference to the great and wise of this earth. Intellect and learning are not necessary to salvation."*

It gives us real pleasure to quote these lines from a work written in a truly philosophical spirit. We are not, indeed, fully prepared to admit all the conclusions of the learned author; not, however, that they are intrinsically inad-

* Moral and Intellectual Diversity of Races. By COUNT A. DE GOBINEAU. Edited by H. HOTZ. P. 216.

missible, but solely because the evidence does not appear to us to be entirely adequate to warrant some of his inductions.* We are not sure, for example, that he has not exaggerated the significance of the past as betokening the future inferiority, for all time, of certain races. With regard to some of these races, at least, it does not appear to us that the experiment of testing the inveteracy of their resistance to the influences tending to improvement and

* The late HUGH MILLER seems to have arrived at conclusions similar to those of Count Gobineau, respecting the permanent inequality of the races. After enumerating and characterizing many of the inferior races, he proceeds to say: "All these varieties of the species, in which we find humanity 'fallen,' according to the poet, 'into disgrace,' are varieties that have lapsed from the original Caucasian type. They are all descendants of man as God created him; but they do not exemplify man as God created him. They do not represent, save in hideous caricature, the glorious creature moulded of old by the hand of the Divine Worker. They are fallen—degraded; *many of them, as races, hopelessly lost. For all experience serves to show that when a tribe of men falls beneath a certain level, it cannot come into competition with civilized man, pressing outwards from his old centres to possess the earth, without becoming extinct before him.* Sunk beneath a certain level, as in the forests of America, in Van Dieman's Land, in New South Wales, and among the Bushmen of the Cape, the experience of more than a hundred years demonstrates that its destiny is extinction—not restoration. Individuals may be recovered by the labors of some zealous missionary, but it is the fate of the race, after a few generations, to disappear. It has fallen too hopelessly low to be restored." (*Testimony of the Rocks.* Edinburgh, 1857, p. 254.

civilization has been sufficiently tried, and accordingly, while we freely grant that the question is fairly debatable, we must hold that no positive conclusion can be announced either way. But let it be granted that a most decided inferiority in intellect and in the capacity of social improvement is to be the permanent heirloom of certain races, a point which is not only possible but quite probable, we yet contend that it proves nothing with respect to the origin of such diversities. We have shown that varieties among lower animals, known to have sprung from the same original stock, often manifest diversities even more considerable than those which separate the most degraded forms of humanity from the finest specimens of the most intellectual races, and also that the characteristics of these varieties, once formed, are as *persistent* as those of the species itself, even when the influences that gave rise to them have been long withheld. Who would expect to be able to convert the numerous existing varieties of the hog to the wild boar, except by an amalgamation? There is, therefore, nothing in the

admitted fact of the permanency of the intellectual and moral inferiority of certain races, which in the least conflicts with the hypothesis of their common origin.

We must here notice and condemn the insidious appeal addressed in "The Types of Mankind" to the prejudices of slaveholders, as a most inadmissible argument in a discussion which should be purely scientific.

We trust that those who, in the providence of God, have been placed in that part of our common country in which the African race is held in servitude, will not be induced by the weak reasoning of a shallow book to put themselves in a false position before the Christian world, and foolishly to seize upon a scientific error, as a mode of asserting rights which have been guaranteed by the Federal Compact, and which are incident to relations recognized and sanctioned by the inspired Apostle to the gentiles.*

* While thus protesting against the scientific error which asserts that the black man is an animal of different origin and species from his white master, we must protest with equal emphasis against the absurd and, in their consequences, wicked doctrines which modern fanaticism

## § 3.

### THE ALLEGED GEOLOGICAL EVIDENCES OF A PREADAMITE RACE OF MEN EXAMINED.

As if from some misgiving as to the adequacy of the argument so laboriously constructed on perversions of the facts of history and those which relate to the existing races of organic beings, the advocates of the diversity-theory, with a remarkable lack of discretion, invoke

strives to erect upon the admitted truth of the unity of mankind. If the inferior races "cannot come into competition with civilized man without becoming extinct before him, as HUGH MILLER so forcibly argues,—if, while only "a few *individuals* may be recovered by the labors of some zealous missionary, it is the fate of the race, after a few generations, to disappear, for it has fallen too hopelessly low to be restored,"—it certainly deserves thoughtful inquiry whether the singular growth of the black population in the Southern States of our confederacy, and the marked improvement of the race in physical and moral characteristics, may not have resulted from its contact with a superior race in the only relation that could exclude the fatal "competition;" whether, in a word, the actual bondage of the blacks in America was not intended, in the merciful and wise providence of God, as the only means of extricating them from their otherwise inevitable "destiny," and of bringing them under the tutelage of a superior race without danger of becoming "extinct before" such higher race. A little reflection on the subjects suggested by such inquiry would make patent duties and responsibilities on the part of every American citizen, nay, of every true Christian, with reference to American Slavery, far different from those sought to be inculcated by the zealous abolitionists of the day both in our country and in Europe. See Epistle of St. Paul to Philemon.

the aid of Geology and Palæontology. More than a century ago Bishop BERKELEY wrote a memorable passage, in which he inferred, on grounds which may be termed strictly geological, the recent date of the creation of man. "To any one," says he, "who considers that on digging into the earth, such quantities of shells, and in some places, bones and horns of animals, are found sound and entire, after having lain there in all probability some thousands of years; it should seem probable that guns, medals, and implements in metal or stone might have lasted entire, buried under ground forty or fifty thousand years, if the world had been so old. How comes it then to pass that no remains are found, no antiquities of those numerous ages preceding the Scripture accounts of time; that no fragments of buildings, no public monuments, no intaglios, no cameos, statues, basso-relievos, medals, inscriptions, utensils or artificial works of any kind are ever discovered, which may bear testimony to the existence of those mighty empires, those successions of monarchs, heroes, and demigods, for so many thousand years?

Let us look forward and suppose ten or twenty thousand years to come, during which time we will suppose that plagues, famine, wars, and *earthquakes* shall have made great havoc in the world,—is it not highly probable that at the end of such a period, pillars, vases, and statues now in being, of granite or porphyry or jasper, (stones of such hardness as we know them to have lasted two thousand years above ground, without any considerable alteration), would bear record of these and past ages? Or that some of our current coins might then be dug up, or old walls and the foundations of buildings show themselves, as wells as the shells and stones of the *primeval world*, which are preserved down to our own times?"*

In quoting these lines, LYELL adds a very emphatic expression of his own confident opinion to the same effect: "That many signs of the agency of man would have lasted at least as long as 'the shells of the primeval world' had our race been so ancient, we may feel as fully persuaded as Berkeley; and we may anticipate

* Alciphron, or the Minute Philosopher. 1732. Vol. II., pp. 84, 85.

with confidence that many edifices and implements of human workmanship, and the skeletons of men, and casts of the human form, will continue to exist when a great part of the present mountains, continents and seas have disappeared. Assuming the future duration of the planet to be indefinitely protracted, we can foresee no limit to the perpetuation of some of the memorials of man."*

These or similar objections, for they are so obvious as to have occurred to every reflecting mind cognizant of the facts, appear to have suggested to the authors of "The Types of Mankind" the expediency of collecting the scattered statements which have been occasionally published of the discovery of osseous and industrial remains of man in diluvial drifts, and especially of human fossil bones imbedded in various rocky strata along with the vestiges of extinct species of animals. Hence the most extraordinary chapter in this extraordinary work, a chapter bearing the title, "Geology and Palæontology in connection with human ori-

* Principles of Geology, p. 740.

gins." Among the cases of alleged fossil men the most celebrated are the Guadaloupe skeletons which, says Dr. Usher, the author of the chapter under consideration, "have been pronounced recent in a manner the most summary." In point of fact they are unhesitatingly pronounced "recent" by all the most competent geologists, who have moreover assigned the best reasons for their verdict. Thus LYELL, representing the general opinion of Geologists, says of these Guadaloupe skeletons, that "they are found in a kind of rock which *is known to be daily forming*, and which consists of minute fragments of shells and corals, incrusted with a calcareous cement resembling travertin, by which also the different grains are bound together. The *lens shows that some of the fragments of coral composing this stone still retain the same red color which is seen in the reefs of living coral which surround the island. The shells belong to species of the neighboring sea intermixed with some terrestrial kinds which now live on the island.* The human skeletons still retain some of their animal matter, and all their phosphate of lime.

"Similar formations are in progress in the whole of the West-Indian Archipelago, and they have greatly extended the plain of Cayes, in St. Domingo, where fragments of vases and other human works have been found at a depth of twenty feet. In digging wells also near Catania, in Sicily, tools have been discovered in a rock nearly similar."*

We need scarcely add that the case of Prof. Agassiz' fossil man of Florida meets with no better acceptance among geologists, to say nothing of Dr. Dowler's estimate of 57,600 years as the age of the sub-cypress Indian disentombed at New-Orleans. This whole argument is, indeed, so very weak, and is based upon such questionable data, that even the Westminster Reviewer, while adopting the general conclusions of the book, is constrained to discredit the facts and reasoning of the chapter under consideration.

Prof. RICHARD OWEN, referring both to the general question of the existence of fossil human skeletons and to the specific instance con-

* Principles of Geology, p. 734.

sidered by Sir Charles Lyell, announces the present opinion of geologists in the following summary: "Human bones have been found in doubtful positions, geologically considered, such as *deserted mines and caves, in the detritus at the bottom of cliffs, but never in tranquil, undisturbed deposits, participating in the mineral characters of the undoubted fossils of these deposits.* The *petrified* skeletons in the calcareous concretes of Guadaloupe are of a comparatively recent origin." So much for the geological *proof* of the indefinite antiquity of the human race.

## § 4.

### ARGUMENT FOUNDED ON THE "LONG CHRONOLOGY" OF EGYPTIAN MONUMENTS.

In this connection we take occasion to comment briefly on the attempt made by Nott and Gliddon to prove the existence in Egypt of a nation in an advanced state of development and civilization at the early date of 3,800 years before Christ, whence they infer the prior existence of man for an indefinite number of years.

This is indeed the prominent idea of their book, the acceptance of which they make the touchstone by which they test the fitness of the first savans of the age to draw legitimate deductions from the specialities to which they have devoted their lives. Their position is thus stated by Dr. Nott: "The spurious systems of Archbishop Usher on the Hebrew Text, and of Dr. Hales on the Septuagint, being entirely broken down, we turn, unshackled by prejudice, to the monumental records of Egypt as our best guide. Even these soon lose themselves, not in the primitive state of man, but in his middle or perhaps modern age; for the Egyptian Empire first presents itself to view about 4,000 years before Christ, as that of a mighty nation, in full tide of civilization, and surrounded by other realms and races already emerging from the barbarous state." Truly this is taking a sufficiently bold and dogmatic tone. Let it be contrasted with that of leading Egyptologists, who, while recording their somewhat hesitating acceptance of the long chronology, do yet, with the cautious reserve of true science, candidly avow the incomplete-

ness and uncertainty of the proof. Thus KENRICK* says of the lists of MANETHO, which are the foundation of Egyptian chronology, that they comprehend, besides the period of Gods, Manes, and Heroes, *thirty* dynasties, from Menes downward to the younger Nectanebus. In some of them the names of all the kings are given, with the length of their reigns, in years, and the sums of each dynasty; in others the names do not appear, but the numbers of the kings and the sums of their reigns are preserved. The historical facts are very brief; of most of the kings nothing whatsoever is recorded, and the synchronisms noted appear to be due to the Christian chronologers (who had copied Manetho's lists) rather than to Manetho himself, whose original works are all lost. The sum of all these dynasties varies, according to our present sources, from 4,684 to 5,049 years; the number of kings from 300 to 350 and even to 500.

"*It is evidently impossible to found a chronolo-*

* Ancient Egypt under the Pharaohs, by JOHN KENRICK, M. A. 1852.

*gy on such a basis*, but Syncellus tells us that the number of generations included in the thirty dynasties was, according to Manetho and the old Egyptian chronicle, 113 ; and the whole number of years 3,555. This number falls much short of what the summation of the reigns would furnish according to any reading of the numbers, but is nearly the same as 113 generations would produce at the average of thirty-two years to each. That Manetho would have access to all the documentary and monumental evidence which the temples and public records supplied (B. C. 322–284,) we cannot doubt, but that from these it was practicable in the third century before the Christian era to deduce a chronology extending backward to the foundation of the monarchy, *is by no means probable.* . . . When we compare him with the monuments, *although there is sufficient accordance to vindicate his integrity, there is also sufficient discrepancy* to prevent implicit reliance in the absence of monuments.

"If we suppose that an accurate record of the successive reigns and the length of each

was preserved from the very commencement of the monarchy, we might easily deduce the chronology of the whole interval from Menes to Nectanebus, by adding together the length of all the reigns. *But this implies that all the reigns were consecutive;* that there either were no joint or rival sovereignties, or that if they existed, only one was fixed on as the legitimate monarch, and *his* years alone entered in the succession. A history of Great Britain in which the years of the kings of England and Scotland before the union of the crowns, or those of the Stuart and Brunswick princes since the revolution, were added together, would present a very false chronology."*

"It was acutely observed by BUNSEN, that where a correspondence exists between the names of Eratosthenes and those of Manetho, it is always in the dynasties which the latter calls Theban or Memphite; and that where the names are lost, the numbers show that there has been no such correspondence in the others. And hence he infers that only those who be-

* Ancient Egypt under the Pharaohs, pp. 79, 80.

longed to the two ancient capitals of Egypt were the true sovereigns of the country, whose reigns give its real chronology; while the others (Elephantinites, Heracleopolites, Xoites), though called kings, never exercised a real supremacy, and being contemporaneous with the Thebans or Memphites, do not enter into the chronological reckoning. Notwithstanding the ability with which this attempt to reconcile Eratosthenes and Manetho is supported, we cannot feel such confidence in its soundness as to make it the basis of a history. We shall, therefore, treat the dynasties of the latter as being, what he evidently considered them to be, successive, unless where there is some internal or independent evidence of error; *admitting at the same time that no great reliance can be placed on a chronology which professes to ascend to the very commencement of the reign of mortal kings in Egypt.* But there appears no evidence that Manetho wilfully tampered with facts known to him, to favor an astronomical or an historical theory; his system may be baseless, but it is not fictitious."*

* Ancient Egypt under the Pharaohs, p. 82.

We cannot too highly commend the tone of candor and the spirit of cautious generalizing indicated in these passages, from a writer admitted by Gliddon himself to rank high among modern Egyptologists. We do not design to discuss the question of consecutive or contemporaneous dynasties in regard to which there appears to be a slight difference of opinion between Kenrick and Bunsen, but we may observe, in passing, that Bunsen's idea, as explained in the preceding paragraph, is carried out to a much greater extent by another Egyptian traveller and scholar, Mr. SAMUEL SHARPE, whom Gliddon characterizes as a man "of vast classical erudition and keen criticism." We are frank to confess that we have not given sufficient attention to this subject to estimate the value of the evidence on the two sides. Our main object has been to call the attention of our readers to the modest and cautious style of reasoning exhibited by an unprejudiced inquirer after truth, in striking contrast with the rude and offensive dogmatism of the pretentious work we have felt it our duty to criticise. We might con-

ditionally admit the correctness of Manetho's list as one of successive dynasties, and that of the "long chronology system" founded thereon, without touching the question of the origin of the human varieties, or without impugning either the integrity of the sacred text or the authenticity of its narrative; since it was not unusual for the sacred historians to give incomplete genealogical lists, one or more names being omitted in most of such lists as are given in the Bible; for it was their object rather to indicate the general line of succession than to furnish the materials for the construction of a chronological table.

## CHAPTER IV.

APPRECIATION OF THE SCIENTIFIC CHARACTER OF THE WRITINGS OF NOTT AND GLIDDON, WHICH RELATE TO ETHNOLOGY—SUMMARY RECAPITULATION OF THE ARGUMENTS IN FAVOR OF THE UNITY OF MANKIND.

THE many and glaring scientific faults of the volume * which, sustained by the apparent sanction of so eminent a naturalist as Prof. AGASSIZ, and by the free and unwarranted use of other great names, has been made the medium of instilling into the minds of the young men of America a rank infidelity, under cover of the pretended authority of science, have been to some extent pointed out in the process of the specific criticisms which we have made on its several departments. We cannot, however, refrain from noticing a few other evidences of a gross departure from the fair reasoning, and from the calm, patient and humble spirit

* "Types of Mankind," by Nott and Gliddon.

which ought to characterize and do always characterize true science. It is habitual with the principal contributors to this work, to dogmatize with a boldness and energy proportional to the slenderness of the evidence on which their opinions are based, this trait being conspicuously manifested in respect to subjects about which the most learned and unprejudiced ethnologists have either come to an entirely different conclusion, or else find it necessary to speak with the utmost diffidence and caution.

Another prominent characteristic which renders that work highly offensive to Christian readers is, the disposition manifested on almost every page to treat with bitter contempt all who believe in the inspiration of the Holy Scriptures. It is well known that a large number of Biblical scholars have maintained, on grounds irrespective of scientific difficulties, that the Noachian deluge was partial in its extent, covering only those portions of the earth then inhabited by the human family. Dr. Nott is unwilling to give "Sectarians," as he terms all believers in the genuineness, authenticity, and inspiration of

the Scriptures, the benefit of this exegesis. He grows warm at the very idea of their escaping from the difficulties which his science raises up against the possibility of a universal deluge. His colleague is even more malignant and denunciatory. Speaking of the book of Genesis, he says:

"Viewed as a literary work of ancient *humanity's* loftiest conception of creative power, it is sublime beyond all cosmogonies known in the world's history. Viewed as a narrative inspired by the Most High, its conceits would be pitiful and its revelations false; because telescopic astronomy has ruined its celestial structure, physics have negatived its cosmic organism, and geology has stultified the fabulous terrestrial mechanism upon which its assumptions are based. How, then, are its crude and juvenile hypotheses about human creation to be received?"*

Now, when it is remembered that this same gentleman tells us that his "former pursuits (in Muslim lands) were remote from natural

* Types of Mankind, p. 565.

science," and such as to disqualify him from sharing the labors of its votaries, it must be admitted that he is sufficiently presumptuous to characterize, in such terms, conclusions embraced by many of the most eminent geologists of the present day. Thus, Prof. DANA demonstrates, in an elaborate comparison of the "two records,"—that of geology, and that of written revelation,—the most exact and wonderful coïncidence between the cosmogony of Moses, rightly interpreted, and the facts of the most advanced modern science, a coïncidence which would be utterly inexplicable on any other hypothesis than that of the inspiration of the sacred historian. "If," says he, "but little flexibility is allowed to the Hebrew by the exegetical student, the record will stand firm, sustained by Nature and the God of Nature. We call it flexibility; yet we have the authority of some learned Biblical scholars for concluding that the liberal rendering required by science is the only correct rendering of the original words of Moses. Our own faith in both records

is the more confirmed the deeper we pursue our investigations."

Again: "The first thought that strikes the scientific reader is, the evidence of Divinity, not merely in the first verse of the record, and the successive fiats, but in the whole order of creation. *There is so much that the most recent readings of science have for the first time explained, that the idea of man as the author, becomes utterly incomprehensible.* By proving the record true, science pronounces it divine; for who could have correctly narrated the secrets of eternity but God himself?"*

"Indeed," says Dr. HITCHCOCK, "I have never met with a single attempt, in any language, by any respectable geologist, to adduce the facts of the science to the discredit of revelation. Many of them are, doubtless, sceptical; but they have not done this thing, as they are charged. If it has been done at all, it is by men of no reputa-

* Bibliotheca Sacra, Jan., 1856, pp. 118 and 110. Prof. DANA ascribes to Prof. ARNOLD GUYOT the credit of having enunciated the best views he had met with on the harmony between science and the Bible, and avows himself indebted to that savant for the thought expressed in the latter paragraph.

tion as geologists." He then adds in a note: "How easy would it be to substantiate these statements by quotations from the most eminent geological writers of the last fifty years; such as Jameson, Silliman, Buckland, Conybeare, Mantell, Sedgwick, Lyell, MacCulloch, Miller, &c. But I will refer only to a recent work by two eminent French geologists, C. D'Orbigny and A. Gente, published in Paris in 1851, entitled 'Geologie appliquée aux Arts et à l'Agriculture.' Coming from a city generally regarded as the centre of European scepticism, and whose learned men have been considered as unfriendly to the Bible, it is gratifying to find that these authors, after a laborious attempt to bring revelation and geology into harmony, pass the following noble eulogium upon the sacred volume: 'In view of the chronological agreement between Genesis and the most authentic geological facts, we cannot but accord to this mysterious book something profound and supernatural. If the mind is not convinced, it at least bows reverently before such writings, brought out in an age when we cannot suppose the first ele-

ments of the natural sciences were known, and which embraces a development of the principal events of which our globe has been the theatre. We find in Genesis something so simple, so touching, and so superior in respect to morality and philosophy, that the sceptic, astonished moreover at the genius that could foretell facts which scientific researches should demonstrate so many ages afterwards, is forced to acknowledge that there is in this book the evidence of inspiration secret and supernatural; an inspiration which he cannot comprehend, which he cannot explain, but which strongly affects him, presses upon him, and controls him.' " *

Another feature in this book which calls for critical notice and emphatic condemnation, even though it depends as we suppose on the carelessness of the writer rather than any intentional design to mislead the ignorant or superficial reader, consists in frequently using names of high scientific standing, in such a connection as to produce the impression that their sanction

* Hitchcock. Religious Truth Illustrated from Science; p. 82, and note.

is given to the opinions advocated in the book, when, in point of fact, the reverse is often the case. A most glaring instance of this is exhibited in quoting a playful passage from a private letter addressed to Dr. Morton by Dr. Pickering, then recently arrived in Egypt. "I had not been three hours in the country," writes Dr. Pickering, "before I arrived at the conclusion that the ancient Egyptians were neither Malays nor Hindoos, but —— Egyptians!"

Mr. Gliddon, being about to introduce this letter, before he names the writer or gives its contents, tantalizes the reader, whom he wishes to prepare for some marvellous discovery, by saying:

"It is invested with the signature of a voyager long blanched under the harness of scientific pursuits; who, as naturalist to the United States Exploring Expedition, had sailed round the world, and beheld *ten types* of mankind, before he wrote, after exploring the petroglyphs of the Nile: 'I have seen in all eleven races of men,' etc. Qualified to judge, through especial training, varied attainments, and habits

of keen observation, that, in natural history, are preëminent for accuracy, the *first impressions* of the gentleman from whose letter to his attached friend we make bold to extract a few sentences, (preserving their original form,) are strikingly to the point."

Now, the words, "*first impressions*," which we have italicized, are significant. Whatever importance was attached to these impressions by Dr. Pickering himself, when they were thus playfully stated in his letter, in December, 1843, it is certain, that at the later date of his official Report, under the title of "Races of Men, and their Geographical Distribution," published in 1848, he did not use the term "races" as equivalent to primeval types; for, in the very work containing the short passages quoted by Gliddon, there is another passage which he does not quote. After adverting to the *permanency of varieties*, declaring that within his own observation he had found no tendency in varieties to revert, in the course of successive generations, to the original type, (a zoölogical principle ignored or denied by the authors of

"The Types of Mankind," inasmuch as a recognition of it would invalidate their famous argument of a diversity of *species*, as founded on the permanency of types,) Dr. Pickering goes on to say:

"There is, I conceive, no middle ground between the admission of eleven distinct species in the human family and the reduction to one. The latter opinion, from analogy with the rest of the organic world, implies a central point of origin. Further, zoölogical considerations, though they do not absolutely require it, seem most to favor a centre on the African continent. Confirmatory circumstances of a different character are not wanting." *

These 'confirmatory circumstances' he proceeds to indicate; but we omit them, as not material to our present purpose, which is merely to show that this author, thus avowing his belief in a single central origin of the human races, has been placed in a false position, in order to lend weight to the rash and weak conclusions, for the promulgation of which the

* Pickering. Races of Men, etc., Bohn's edition, p. 315.

work of Nott and Gliddon has been so laboriously compiled.

A similar instance of carelessness in quoting another eminent naturalist, whose opinions are stated in such a connection as to bear the appearance of sanctioning the peculiar views of these writers, is found on page 457, where Dr. Nott, after disclaiming any desire to degrade any type of humanity to the level of the brute creation, adds that, nevertheless "it cannot be rationally affirmed that the orang-outan and chimpanzee are more widely separated from certain African and Oceanic Negroes, than are the latter from the Teutonic or Pelasgic tribes. But," he continues, "the very accomplished anatomist of Harvard University, Dr. Jeffries Wyman, has placed this question in its true light." Then follows a correct citation of Dr. Wyman's remarks, in which, strange to say, we find these words: "Any anatomist who will take the trouble to compare the skeletons of the Negro and Orang, cannot fail to be struck at sight with the wide gap which separates them. The difference between the cranium,

the pelvis, and the conformation of the upper extremities, in the Negro and Caucasian, *sinks into insignificance when compared with the vast difference which exists between the conformation of the same parts in the Negro and the Orang.*" The italics are ours. This is, we admit, "to place this question in its true light," but it is the reverse of the position assumed by Dr. Nott, who yet quotes this passage to sustain his position!

Some of the characteristics which we have attributed to this work, as invalidating its title to be acknowledged as a product of genuine science, are exhibited in a concentrated form in a final summary of what the writer calls "legitimate deductions" "from the facts now accessible." It is unnecessary to notice most of these, as they have been fully answered in the course of our argument. The fifth among them is thus expressed: "That PERMANENCE of type is accepted by science as the surest test of SPECIFIC character." This we meet with an emphatic denial; unless by an arbitrary definition the writer restrict the application of type

to distinct species, in which case he assumes in his definition the thing to be proved, and then makes a show of demonstrating it, by merely quoting his arbitrary definition. If he means by "type" any distinctive character or combination of characters which is found to be permanent, we deny that science has shown permanency of type to be any more characteristic of species than of certain varieties, which for that reason are called PERMANENT VARIETIES, the existence of which within the limits of a single species, as of the hog, horse, cow, yea, and MAN, is admitted by the great body of men of "science," in every centre of learning in Europe and America—men, too, representing every branch of "science" which bears at all upon the question; in Comparative Anatomy and Physiology, FLOURENS, MÜLLER, OWEN, CARPENTER, DRAPER, etc.; in Natural History and Geology, ED. FORBES, LYELL, HITCHCOCK, DANA, etc.; in Philology, WM. HUMBOLDT,* GRIMM,

* Mr. Gliddon has attempted to show (INDIGENOUS RACES OF THE EARTH, pp. 402–409), that William Humboldt has pronounced "a mature opinion" adverse to the doctrine of the single origin of mankind, and that this opinion is "endorsed" by his illustrious brother. We do

LATHAM, GALLATIN, etc.; in General Ethnology, ALEXANDER HUMBOLDT, PRICHARD, PICKERING, SCHOOLCRAFT, etc.; and in Egyptology, BUNSEN, LEPSIUS, and others, who are further accredited for their vast philological erudition, and have announced their firm belief in the unity of the races, as legitimately deduced from their linguistic researches. "There is," says the saga-

not, however, erase their names from the above list (which might be indefinitely extended), because, in the first place, whatever may have been their doubts as to the possibility of *proving* the descent of all mankind from a single pair, it is certain that they have both advocated the community of origin of races now distinguished by *permanent typical characters*, and this is the question to which immediate reference is had in the foregoing passage; and because, secondly, they have elsewhere expressed themselves in such terms as to warrant the belief that they had a very decided leaning towards the doctrine of a single origin of all the human races. Thus, for Alexander Humboldt, see the passage from Cosmos already quoted (Supra p. 220), and for Wm. Humboldt, note the following concession of Gliddon himself, which, despite its hypothetical form, is yet significant. He says (op. cit., p. 423), "Even under the supposition that Wilhelm von Humboldt, in his now past generation, when writing 'on the *Diversity* of Languages and Peoples,' may have speculated upon the possibility of reducing both into one original stock, it will remain equally certain that, in such an assumed conclusion, he was biassed by no dogmatical respect for MYTHS, FICTION, or PRETENDED TRADITION; and furthermore, that, if he grounded his results on the '*Kawi* Sprache,' he inadvertently built upon a quicksand, as subsequent researches have established." In other words, Mr. Gliddon can tolerate a man's believing in the single origin of mankind, provided only he hold the statements of the Holy Bible to be "myths, fiction, and pretended tradition." Such is the *animus* with which this work of so-called "science" is undertaken.

cious HUGH MILLER, "a species of superstition which inclines men to take on trust whatever assumes the name of science." With such persons, those who make the most positive assertions in matters of science are most likely to be trusted. They seem not to be aware that the "positivism" of genuine science consists, not in confidence and boldness of assertion, but in demanding rigorous proof for every conclusion, whether it be expressed by affirmative or negative propositions.

Another of the "legitimate deductions" of Dr. Nott is in these words: "10. That PROLIFICACY of distinct species *inter se*, is now proved to be no test of COMMON ORIGIN." No one that we ever heard of has pretended that the power of mixing the breeds in different species is a test of common origin. No believer in the unity of the human races has ever committed the absurdity of maintaining that "*distinct species*" could by any possibility have a common origin. They do maintain, however, that *distinct varieties*, no matter how different in type, may breed *inter se* indefinitely; and they hold

that the converse is true, namely, that where animals of distinct type are shown to be capable of crossing their breeds without limit, they are thus proved to be mere varieties of one species.

In the introduction to Part I. of the work which we have felt it our duty to criticise, Dr. Nott reproduces a passage from his "Biblical and Physical History of Man," in which he dismisses rather contemptuously the idea of explaining the *diversity* now seen in the white, black, and intermediate colors, on the supposition of a *miracle* or direct act of the Almighty, in changing one type into another. And yet this gentleman does not hesitate to assert the primeval origin of such types, as if this mode of origin were any the less miraculous. The formation of man out of the dust of the earth was the crowning work of creative skill, the highest exhibition of miraculous power. Inasmuch as it has been shown that man has the power of undergoing acclimation in every habitable quarter of the globe, and had the means of facilitating his migrations from his original birthplace, while moreover he is con-

stitutionally susceptible of undergoing variations in bodily structure and in intellectual and moral tendencies, which variations, once acquired, are subsequently perpetuated by descent, it is contrary to the observed ways of Providence to multiply miracles, and especially the highest miracles, in order to achieve a result which was clearly practicable by natural processes.

Nor is this method of reasoning purely *a priori* in its application to the question under consideration. Community of languages and other reliable data, such as most significant resemblances between the monuments of early races in every quarter of the globe, furnish abundant proof of extensive migrations of the human family in ante-historic times, and this fact explains as fully as can be required the circumstance so much insisted upon by Prof. Agassiz, that "the earliest migrations *recorded* in any form, show us man meeting man wherever he moves upon the habitable surface of the globe, small islands excepted," without the necessity of having recourse to the untenable hypothesis of a frequent repetition of the great

miracle of man's creation.* When a new coral island emerges above the sea-level to become covered with vegetation and to receive a population of animated beings, it is not by a new creation of species but by various means of transport of individuals from more or less remote countries, that the flora and fauna of the island are established.

In view of the results of the critical examination which we have now made, at some considerable length, of the theory which assigns a diversity of origins for the different races of mankind, it must, we think, be conceded, that the advocates of that theory have failed at every point to make out their case. In point of fact the task they aimed to accomplish was a most difficult one. There was, in the nature of things, but one conceivable way of demonstrating positively the truth of that theory, and that was confessedly precluded by the absolute inaccessibility of evidence. We refer to historical records going back to the first creation of the several distinct types of man, and proving

* See Appendix F.

that they were separately created. In default of this they have gone back as far, it is freely admitted, as they could go, and, finding evidence that distinct types existed at this early period, they have inferred that the distinctions were original. We have already more than once exposed the fallacy of this reasoning, by showing, first, that irrespectively of the hypothesis of miraculous interposition, and proceeding on the supposition that the existing types have sprung from natural causes bringing about variations, a comparatively short time is abundantly adequate to give rise to such variations; and secondly, that once produced, they *may* have all the tenacity and permanence of specific characters, except, of course, where the breeds are mixed. Now, inasmuch as the earliest monumental records do not go back to the creation of any one type, it is manifestly to beg the whole question to say that they prove an *original* diversity of types. We have thus provisionally granted the "permanency" of the human types, as we can well afford to do, in conformity with the analogy of "permanent va-

rieties" among lower animals. But here we must put in a caution. Not all varieties among animals are permanent. Many cases of variation, slowly assumed under the influence of causes operating through several generations, exhibit the phenomenon of the hereditary transmission of the acquired peculiarities with considerable tenacity, and yet under the prolonged influence of opposite circumstances may gradually lose such peculiarities. This may, for aught we know to the contrary, be the case with the human varieties. It is quite certain that the monumental inscriptions of Egypt do not settle this question either way. It is a little remarkable that reliance is so confidently placed on these monuments, when it is clear that *no one can point out at this day the actual lineal descendants of the individual men of the negro and other races depicted on them.* For aught that can be proved to the contrary, the actual descendants of the blacks who lived contemporaneously with the authors of the inscriptions may now exhibit the characteristics of any other type. We have no genealogical

tables by which we can identify the descendants in historical times of the blacks of that early period.

This being so, what right have they to assert dogmatically that the types have not changed in the persons of the descendants of those very men? All that the monuments prove is, that in that day there was a negro type identical with one now existing, which implies, it may be, the continued operation somewhere of the causes which originally produced that type, but certainly does not prove the unchangeableness of the type in any given line of successive individuals. It is premature, by very many centuries, perhaps, to assert that this type will not change in such a line of succession, the individuals in which shall be subjected for generation after generation to new influences of climate, soil, and mode of life. The African race in the United States will ultimately, but not in our day, solve this problem. Many acute observers, as Sir Charles Lyell, for example, are confident that they already see a change. We doubt this: for even if a change were in prog-

ress, it is yet too soon to substantiate the proofs. But even on the supposition of perfect fixedness of type, the question of origin is left exactly where it was before.

Well, then, this monumental argument not availing the advocates of "diversity," what resource is let them? Why, absolutely no positive ground whatsoever: and they are driven to the expedient of trying to prove a negative for each of the positive arguments in favor of the unity doctrine which they oppose. Let us suppose that they succeed in showing the insufficiency of the physiological proof of the unity of man; they must then attack the historical argument, the philological, the geological, and so on in succession, gaining nothing of advantage until they have overthrown each and every one. And if they succeed in all this,—a most violent supposition, truly,—there yet remains as an impregnable citadel, that innate conviction of brotherhood which, in the eloquent language of Agassiz, "is but the reflection of that Divine nature which pervades man's whole being." We perceive, then, that success in the task these

gentlemen have assigned to themselves is manifestly hopeless. A failure at any one step is fatal; and, as we have seen, they fail everywhere. On the other hand, the proof of man's unity is cumulative. There are various independent proofs. Each being more or less complete in itself, any one would suffice to sustain the doctrine we contend for. The sum of all strengthens belief into conviction. And when we consider them in their mutual relations as parts of one whole, and all converging to one common and necessary conclusion, further resistance becomes irrational and further doubt absurd. We conclude our discussion of the subject with a passage from a discourse by an eloquent living divine,* in which the relation of the doctrine of the Unity of Mankind to the nature and office of the Lord Jesus Christ is most impressively set forth.

"The unity of the human race must be considered a fundamental and an accepted truth. Every department of knowledge has been searched for evidence, and all respond with a

* Rev. R. J. Brekinridge, —"Discourse on the Black Race."

uniform testimony. The physical structure, constitution and habits of the race—the mode in which it is produced, in which it exists, in which it perishes—everything that touches its mere animal existence, demonstrates the absolute certainty of its unity—so that no other generalization of physiology is more clear and more sure. Rising one step, to the highest manifestation of man's physical organization—his use of language and the power of connected speech—the most profound survey of this most complex and tedious part of knowledge, conducts the inquirer to no conclusion more indubitable than that there is a common origin, a common organization, a common nature, underlying and running through this endless variety of a common power, peculiar to the race and to it alone. Thus a second science—philology—has borne its marvellous testimony. Rising one more step, and passing more completely to a higher region, we find the rational and moral nature of men of every age and kindred, absolutely the same. Those great faculties by which man alone—and yet by which every man—perceives

that there is in things that distinction which we call true and false, and that other distinction which we call good and evil ; upon which distinctions and which faculties rests at last the moral and intellectual destiny of the entire race ; belonging to us as men, without which we are not men, with which we are the head of the visible creation of God. So has a third science —a science which treats of the whole moral constitution of man, embracing in its wide scope many subordinate sciences—delivered its testimony. If we rise another step, and survey man as he is gathered into families, and tribes, and nations, with an endless variety of development, we still behold the broad foundations of a common nature reposing under all—the grand principles of a common being ruling in the midst of all. So a fourth, and the youngest of the sciences — ethnology — brings her tribute. And now, from this lofty summit, survey the whole track of ages. In their length and in their breadth, scrutinize the recorded annals of mankind. There is not one page on which one

fact is written—which favors the historical idea of a diversity of nature or origin—while the whole scope of human story involves, assumes, and proclaims, as the first and grandest historic truth, the absolute unity of the race. And then, mounting from earth to heaven, ask God —the God of truth, and he will tell you, that the foundation truth of all his work of creation and of providence is the sublime certainty that our race was created in his own image, and of one blood; and thereupon, when they had fallen, he offered to them a common salvation, through his only begotten Son, made manifest in their common nature.

"A bond of common brotherhood unites every portion of the race; it is felt the most keenly by those who are the most exalted; and even in the most abject, its weak pulsations will still live to attest the depth of the truth, that our race is one. It is in the life and doctrine of Jesus Christ that this profound instinct of human nature finds itself exalted into one of the grandest truths of religion, and invested

with the sanction of heaven. In Him, the conception of this universal brotherhood,—which nature teaches, and all knowledge fortifies,—becomes a precious, living truth."

# APPENDIX.

## A.

NOTE TO PAGE 36.

"THE causes which give rise to the varieties of species, says Prof. J. Müller, of Berlin, the first, perhaps, of living physiologists, "are partly seated in the organisms of the animals themselves, and partly external conditions, such as the food, the elevation above the sea, and the climate. Each species of plants and animals possesses within itself a power of variation within a certain limit, quite independently of any external influences. To this cause are to be referred the varieties of form which may present themselves in the offspring of one act of generation. In each individual of a species there is an innate capability of producing such varieties as these, since each individual of a species does not produce by generation the mere repetition of itself, but generates the new beings in accordance with laws which regulate the whole species. Thus from the same parents there may be produced individuals with fair and others with dark hair; some of spare and slender figure, and others of plump and stout robust form; individuals of different temperaments, and with different features, eyes, mouth, and nose, with hair in some instances curly, and in others straight. The most common varieties arising in this

way from internal causes, are the fair and the dark haired. Fair persons are occasionally met with amongst races for the most part characterized by black hair,—for example, amongst the Mongolians; and Dr. Prichard adduces several examples of fair-complexioned negroes who were not albinos. It is true that these varieties are chiefly due to the parents being individuals of different complexions, and to the characteristics sometimes of one and sometimes of the other being predominant in the offspring. But even when the parents have the same complexion, a certain variety of forms and internal properties may present itself in the offspring. In consequence of the mingling of these different varieties in marriage, their peculiarities are not preserved and are not propagated as constant, fixed types. It is easy to conceive the conditions which must be combined in order, independently of climate, food and locality, to convert these accidental varieties into persistent types. The longer individuals of the same stock continue to unite in marriage, without foreign admixture, the longer will the type to which they belong be preserved. *In this way, and independently of all external influences, a race will be formed.* Sometimes when the type has become fixed through a series of generations in the members of a family, even the admixture of a foreign type is not sufficient to efface the fixed characters of a family, and the foreign element becomes lost in the older fixed type. Hence we see in many royal families, that in spite of their union by marriage with other houses, the type of the family features is in a remarkable way preserved, and transmitted from generation to generation—as, for example, in the Bourbon family, and equally in many princely houses of Germany. It was previously shown how one family, being isolated by the intermarrying of its members exclusively with each other, might produce a nation or tribe with general distinguishing character. History teaches us how the national type

once formed is preserved in spite of individual variations through thousands of years, and that, except when modified by admixture with other types, it is maintained unchanged."—*J. Müller, Elements of Physiology. Translated by W Baly. London*, 1842.

## B.

NOTE TO PAGE 58.

ALTHOUGH the facts and authorities cited in the text amply suffice to sustain the doctrine of *permanent varieties* within the limits of a single species, we cannot deny ourselves the satisfaction of referring to a more recent authority—not accessible to us at the date of the first publication of this essay in the Protestant Episcopal Quarterly Review—we allude to a treatise "ON THE VARIATION OF SPECIES," by T. Vernon Wollaston, M. A., F. L. S. Adverting to the tendency, manifested in certain quarters, to regard every difference, if at all permanent, as a specific one, this eminent naturalist considers "that a revival of our first principles is occasionally necessary, if we would not restrict (however gradually and imperceptibly) that legitimate freedom which nature has had chalked out for her to sport in, or strive to impose laws of limitation in one department which we do not admit to be coercive in another." He shows that the *fact* of variation, besides being probable on the ground of analogy, is demonstrated by experience, and then proceeds to inquire into the *causes* of variation. These and certain collateral questions having been investigated in a masterly manner, he warns the reader, upon concluding, that it is merely *within specific bounds* that he would advocate a freedom of development in obedience to influence from without; and conclusively shows that the change, sometimes brought against the advocates of variation, of a leaning to Lamarck's transmutation theory, is most unwarrantable, and that, on the con-

trary, the actual reverse is nearer the truth. For "those very hyper-accurate definers who recognize a 'species' wheresoever the minutest discrepancy is shadowed forth, will be found eventually (however unaware of it themselves) to have been the most determined abettors of that dogma—seeing that their species, if such they be, do most assuredly pass into each other." We have not the means of knowing whether the able and learned author had especial reference to the argument of Prof. Agassiz, who, in his "Sketch of the Natural Provinces of the Animal World" (Types of Mankind, by Nott & Gliddon) charges most preposterously that the doctrine of the specific unity of the human races "runs inevitably into the Lamarckian development theory," but we are fully satisfied with his summary way of disposing of the charge by whomsoever preferred, and of indicating an easy method of retort. His own opinions, respecting the fixedness of species as compatible with the fact of variation, are thus expressed in the last paragraph of his instructive little treatise. "But, whatever be the several ranges within which the members of the organic creation are free to vary, we are positively certain that, *unless the definition of a species, as involving relationship, is no more than a delusion or romance*, their circumferences are of necessity real, and must be indicated *somewhere* —as strictly, moreover, and rigidly, as it is possible for anything in nature to be chalked out. The whole problem, in that case, does in effect resolve itself to this—where, and how, are the lines of demarcation to be drawn? *No amount of inconstancy, provided its limits be fixed, is irreconcilable with the doctrine of specific similitudes.* Like the ever-shifting curves which the white foam of the untiring tide describes upon the shore, races may ebb and flow; but they have their boundaries in either direction, beyond which they can never pass. And thus in every species we may detect, to a greater or less extent, the emblem of instability

and permanence combined. Although perceived, when inquired into, to be fickle and fluctuating in their component parts, in their general outline they remain steadfast and unaltered, as of old—

> Still changing, yet unchanged; still doomed to feel
> Endless mutation, in perpetual rest."

The Westminster Review (January, 1857, p. 154,) prefaces a highly commendatory notice of Mr. Wollaston's little volume with the following pertinent remarks: "An opinion is gradually extending amongst those naturalists who look beneath the surface of their pursuit, that species-making has been carried both by botanists and zoölogists, to far too great an extent; and that the whole subject of the influence of climate, habits of life, and other external conditions, as well as of the capacity for variation inherent in each type of form, requires a thorough reïnvestigation. Thus Dr. Jos. D. Hooker, in his "Introductory Essay on the Flora of New Zealand," has recently well remarked, that "the naturalist who has the true interest of science at heart, not only feels that the thrusting of an uncalled for synonym into the nomenclature of science is an exposure of his own ignorance, and deserves censure, but that a wider range of knowledge and a greater depth of study are required to prove those dissimilar forms to be identical which any superficial observer can separate by words and a name." In the same essay, this accomplished botanist expresses the opinion that the reported number of 100,000 distinct species of flowering plants will be reduced at least one half by the careful comparison of the Floras of different countries. In the annual address to the Microscopical Society given almost contemporaneously (February, 1855,) by its then President, Dr. Carpenter, a similar doctrine was expressed in almost identical terms; and we are glad to find that Mr. Wollaston,

the accomplished author of the "Insecta Maderensia," has made it a special object of inquiry during his residence in the Madeira Islands." . . . . . "We can cordially recommend the perusal of his little volume to every naturalist, whatever may be his special object of pursuit, who aims to exercise his intellect by grappling with those higher problems of the science which seem to us to be at least as serviceable for the culture and discipline of the mind as the abstractions of mathematics, or the barren investigation of what is par excellence designated as 'scholarship,' as if there was nothing in the volume of creation worthy to exercise the higher faculties of the human intellect."

In like manner Prof. DANA, of Yale College, has clearly shown that liability to variation is not only not inconsistent with the permanence of species, but is in fact "part of the law of species."

He first shews that in the inorganic world "each element is represented by a specific amount or law of force, and that we even set down in numbers the precise value of this force as regards one of the deepest of its qualities, chemical attraction," and then, turning to the organic world, deduces the same idea as essential to species, from the following considerations: "The individual is involved in the germ-cell from which it proceeds. That cell possesses certain inherent qualities or powers, bearing a definite relation to external nature, so that when having its appropriate nidus or surrounding conditions, it will grow, and develop out each organ and member to the completed result; and this, both as to chemical changes, and the evolution of the structure which belongs to it as subordinate to some kingdom, class, order, genus and species in nature. The germ-cell of an organic being develops a specific result; and like the molecule of oxygen it must correspond to a measured quota or specific law of force. We cannot, indeed, apply the measure, as in the inorganic kingdom, for we have learned no method or unit of comparison. But it must nevertheless be true, that a

specific predetermined amount, or condition, or law of force is an equivalent of every germ-cell in the kingdoms of life. We do not mean to say that there is but one kind of force; but that whatever the kind or kinds, it has a numerical value or law, although human arithmetic may never give it expression. A species among living beings, then, as well as among inorganic bodies, is based on *a specific amount or condition of concentred force defined in the act or law of creation.*"

"What now," he asks, "may we infer with regard to the permanence or fixedness of species from a general survey of nature? Let us turn again to the inorganic world. Do we there find oxygen blending by indefinite shadings with hydrogen or with any other element? Is its combining number, its potential equivalent, a varying number, usually 8, but at times 8 and a fraction, 9, and so on? Far from this; the number is as fixed as the universe. There are no indefinite blendings of elements. There are combinations by multiples and sub-multiples, but these prove the dominance and fixedness of the combining numbers. . . . This being true for inorganic nature, it is necessarily the law for all nature, for the ideas that pervade the universe are not ideas of contrariety but of unity and universality beneath and through diversity. The units of the inorganic world, are the weighed elements and their definite compounds or their molecules. The units of the organic world are *species*, which exhibit themselves in their simplest condition in the germ-cell state. The kingdoms of life in all their magnificent proportions are made from these units. Were these units capable of blending with one another indefinitely, they would no longer be units, and species could not be recognized. The system of life would be a maze of complexities; and whatever is grandeur to a being that could comprehend the infinite, it would be unintelligible chaos to man."

After adverting to the fact that everywhere in nature "the purity of species has been guarded with great precision," and adducing proofs which we shall quote in another connexion, he proceeds to consider the *variations of species*. The principles just laid down teach that each species has its specific value as a unit, which is essentially permanent or indestructible by any natural source of change; and therefore, that variations have their limits, and cannot extend to the obliteration of the fundamental characteristics of a species.

"Variation is a characteristic of all things finite, and is involved in the very conditions of existence. No substance or body can be wholly independent of every or any other body in the universe. . . . All the natural forces are closely related as if a common family or group, and are in constant mutual interplay. The degree or kind of variation has its specific law for each element; and in this law the specific nature of the element is in a degree expressed. There is to each body or species, the normal or fundamental force in which its very nature consists; and, in addition, the relation of this force to other bodies, or kinds, amounts, or conditions of force, upon which its variations depend. One great end of inorganic science is to study out the law of variables for each element or species. For this law is as much a part of an idea of the species as the fundamental potentiality; indeed, the one is a measure of the other.

"So again, a species in the organic kingdoms is subject to variations, and upon the same principle. Its very development depends on the appropriation of material around it, and on attending physical forces or conditions, all of which are variable through the whole of its history. . . . . Liability to variation is hence part of the law of species; and we cannot be said to comprehend in any case the complete idea of the type until the relations to external forces are also known. The law of variables is as much an expres-

sion of the fundamental qualities of the species in organic as in inorganic nature; and it should be the great aim of science to investigate it for every species. It is a source of knowledge which will yet give us a deep insight into the fundamental laws of life. Variations are not to be arranged under the head of *accidents*; for there is nothing accidental in nature; what we so call, are expressions really of profound law, and often betray truth and law which we should otherwise never suspect. This process of variation is the external revealing the internal, through their sympathetic relations: it is the law of universal nature reäcting on the law of special nature, and compelling the latter to exhibit its qualities; it is a centre of force manifesting its potentiality, not in its own inner workings, but in its outgoings among the equilibrating forces around, and thus offering us, through the known and physical, some measure of the vital within the germ. It is therefore one of the richest sources of truth open to our search. The limits of variation, it may be difficult to define among species that have close relations. But being sure that there are limits—that science, in looking for law and order written out in legible characters, is not in fruitless search, we need not despair of discovering them. The zoologist, gathering shells or molluscs from the coast of Eastern America and that of Japan, after careful study, makes out his list of identical species, with the full assurance that species are definite and stable existences."*

* Bibliotheca Sacra—October, 1857. *Thoughts on Species*, by J. D. Dana.

An able writer in the Princeton Review, for January, 1859, while adopting the idea intended to be conveyed by Prof. Dana's definition of Species objects to the phraseology in which it is expressed. He does not approve of the "disposition among naturalists to merge substances into forces." "Matter," he urges, "however incapable of definition or conception in itself considered is not mere force." We fully accept this latter proposition as an undeniable truth. We are, moreover, of opinion that those naturalists who have speculated most

largely on the nature and correlations of forces have been the least disposed to substitute forces for substances, or to merge the latter into the former. On the contrary, by insisting upon the existence and operation of the one they have most effectively exhibited the province of the other as a necessary medium. Now, as will be seen by the foregoing citations, Prof. Dana by no means ignores the material germ-cell which, in developing a specific result, "must correspond to a measured quota of force;" and when he adds that "a species *is based upon* (not *is*) a definite amount or condition of force" the expression does not seem to be obnoxious to the objection urged by the Reviewer.

## C.

NOTE TO PAGE 125.

To furnish such of our readers as may not have access to the works of Dr. Prichard or those of Dr. Carpenter, with a specimen of the very careful manner in which they have collected and analyzed the facts on which the conclusions cited in the text are based, we will here introduce a quotation from each, relating, one, to the average duration of human life, the other, to the epoch of the first menstruation.

"The average duration of human life is nearly the same in the different races of men. But in order to estimate the facts which bear upon this subject, an account must be taken of the vast influence which climate alone exercises on the rate of mortality. It is well known that the proportional number of individuals who attain a given age, differs in different countries; and that the warmer the climate, other circumstances being equal, so much the shorter is the average duration of life. Even within the limits of Europe the difference is very great. In some instances, according to the calculations of M. Moreau de Jonnès, the rate of mortality, and inversely the duration of life, differ by nearly one half from the proportions discovered in other examples. The following is a brief extract from a table presented to the Institute by this celebrated calculator:

*Table exhibiting the Annual Mortality in different Countries in Europe.*

| | | | | | |
|---|---|---|---|---|---|
| In Sweden, | from 1821 | to 1825, | - - | 1 | death in 45 |
| Prussia, | " 1821 | to 1824, | - - - | 1 | " " 39 |
| England, | " 1821 | to 1831, | (Porter & Rickman) | 1 | " " 51 |
| France, | " 1825 | to 1827, | - - | 1 | " " 39.5 |
| Roman States, | 1829 | - - - - | | 1 | " " 28 |
| Scotland, | 1821 | - - - - - | | 1 | " " 50 |

"The difference between twenty-eight and fifty is

very considerable; but even the latter rate of mortality is considerably greater than that which the data collected by M. Moreau de Jonnès attribute to Iceland, Norway and the northern parts of Scotland.

"No adequate data have yet been collected for estimating the comparative longevity of different races of men, after making suitable allowances for the influence of climates; but facts are easily to be found, which prove that no great difference exists in this respect between the most dissimilar tribes. It was calculated by Buffon, with reference principally to white men, that a third part of the human race die before the age of ten years; one half before that of thirty-five; two thirds before fifty-two; and three fourths before sixty-one years of age. A very different computation has been made by later writers. According to Hufeland's estimate, out of a hundred individuals born, fifty die before their tenth year, and six only live to be above the age of sixty.

"Many instances of longevity in Europeans have been collected by Mr. Easton, from whose work I have taken the first of the following tables. He has discovered the following numbers of persons who have reached the ages below stated:

| | |
|---|---|
| From 100 to 110, both inclusive, | 1,310 |
| " 110 to 120 | 267 |
| " 120 to 130 | 84 |
| " 130 to 140 | 26 |
| " 140 to 150 | 7 |
| " 150 to 160 | 3 |
| " 160 to 170 | 2 |
| " 170 to 180 | 3 |

*Instances of Longevity in Negroes.*

| | |
|---|---|
| Mallum Dando, King of Rabbah, | 115 |
| Robert Lynch, Jamaica, | 160 |
| Catherine Lopez, Jamaica, | 134 |
| Margaret Darby, Jamaica, | 130 |
| Mulatto at Fredericktown, N. A., in 1797, | 180 |
| Tom, a slave of Mrs. Bacon, South Carolina, | 130 |
| Joseph Ban, Jamaica, | 146 |
| Catherine Hiatt, Jamaica, | 150 |

(*Natural Hist. of Man*, pp. 481, 482.)

In his "Physical History of Mankind," Dr. Prichard shows that similar instances of longevity occur among the other races. He denies the accuracy of Dr. Rush's statement, that longevity is more rare among the Indians of North America than among white people, except when the lower longevity is plainly attributable to accidental causes, and to the peculiar state of certain tribes, from whom, perhaps, Dr. Rush's information was derived.

Don Felix de Azara seems to have formed this opinion of the natives of South America. In describing the Charruas of Paraguay, he says that they never lose their hair, which only becomes grey by half in persons aged about eighty years.

The Mexicans, says Clavigero, become grey-headed and bald earlier than the Spaniards; and although most of them die of acute diseases, it is not very uncommon among them to attain to the age of a hundred years.

We have a similar observation from M. de Humboldt respecting the native Americans. He says, "It is by no means uncommon to see at Mexico, in the temperate zone, half way up the Cordillera, natives, and especially women, reach a hundred years of age. This old age is generally comfortable; for the Mexican and Peruvian Indians preserve their strength to the last. While I was was at Lima, the Indian, Hilario Pari, died at the village of Chiquata, four leagues distant from the town of Arequipa, at the age of one hundred and forty-three. He had been united in marriage for ninety years to an Indian of the name of Andrea Alea Zar, who attained the age of one hundred and seventeen. This old Peruvian went, at the age of one hundred and thirty, from three to four leagues daily, on foot." He then cites instances occurring among the Laplanders, and concludes, on the whole, that there are not any well-marked differences in respect to longevity between the different races of men, which can furnish a constant

character. "It would appear that the same law, as to the duration of life, has been imposed by Providence on all nations of men. In this point of view they appear as one species. Even in different climates *the tendency to exist* for a given time is the same; the duration of life varies only from the circumstance, that the external causes which bring about an accidental and premature catastrophe, or which wear out the health and impair the bodily frame, are more rife or more potent in one climate than in another."—(*Nat. History of Man*, p. 483.)

The other point in regard to which we have proposed to cite statistical evidence, has respect to the *epoch of the first menstruation*. On this subject, says DR. CARPENTER (Cyclopædia of Anatomy and Physiology, vol. iv., pp. 1339, 1340), "an inquiry has been most industriously prosecuted by Mr. ROBERTON; and its results, published from time to time, as they were obtained, have been lately collected in a form which admits of easy comparison.—(*Essays and Notes on the Physiology and Diseases of Women and on Practical Midwifery*. 8vo, London, 1851.) It appears, from the evidence which he has brought together, that there is no considerable difference either in the *average* period of puberty, or in the *earliest* date of menstruation, among the greater number of tribes who are scattered over the whole of the habitable globe, from the equatorial to the polar regions, and that neither has a cold climate that influence in retarding it, nor a warm one in accelerating it, which is popularly attributable to these agencies respectively. The only well-marked exception to this general rule, occurs in the case of the Hindoo females, among whom the first menstruation, *on the average*, is about two years earlier than in this country (England). But this only arises from the fact that a *larger proportion* of first menstruations among Hindoo females, takes place in the *earlier* years of that period over which the commencement of puberty is

distributed in European females, the distribution in the latter being more equable, as will be seen by the following table, furnished by Mr. Roberton:

| *Ages.* | *Hindustan.* | *England.* |
|---|---|---|
| 8 | 3 | — |
| 9 | 8 | 14 |
| 10 | 18 | 55 |
| 11 | 80 | 77 |
| 12 | 145 | 142 |
| 13 | 139 | 263 |
| 14 | 105 | 396 |
| 15 | 45 | 417 |
| 16 | 24 | 340 |
| 17 | 18 | 215 |
| 18 | 5 | 138 |
| 19 | 3 | 65 |
| 20 | 1 | 33 |
| 21 | 2 | 9 |
| 22 | — | 4 |
| 23 | 1 | 1 |
| | 597 | 2,169 |

While the average age of puberty in the Hindoo female is thirteen years, and in the British fourteen years and eleven months, the per centage of menstruations under eleven years is nearly the same in both countries, so that the current idea of the *very early* puberty of Hindoo females is quite incorrect; and the difference in the average arises solely from the fact, that the greatest number of first menstruations occur among Hindoo females in the 12th, 13th and 14th years, whilst among the females of this country the larger proportion presents itself in the 14th, 15th and 16th years." After showing that this difference cannot be owing to climate, for the West Indian Islands have a higher mean annual temperature than Calcutta and the Dekhan, Mr. Roberton ascribes it, with great show of reason, to the early marriages in Hindustan, it being a law of the Shastras that females shall be given in marriage *before* the occurrence of menstruation. It can scarcely be questioned that such a premature sexual

excitement will have a tendency to accelerate the epoch of puberty; and that when this is constantly acting through a long succession of generations, an early puberty may come to be a character of *race*. Again, "when it is recollected," says Mr. Roberton, "that the consummation of marriage among the Hindoos has taken place, at the latest, on the arrival at puberty, during a lapse of more than three thousand years, and that the practice is sanctioned by ancient laws and consecrated by custom, it is easy to conceive that those females who were latest in reaching puberty would be the least sought after for wives—that such women would not be unlikely in many instances to remain unmarried—and that thus Hindoo women would gradually come to consist, in a proportion different from that in Europe or elsewhere, of such as by constitution are early nubile. To me there seems nothing extravagant or far fetched in this supposition. The production of a like state of things in England, in any particular district, is quite conceivable. Nothing is better established, than that early or late puberty is a family peculiarity. Let us, then, only suppose families, possessing this kind of constitution, to intermarry, and the peculiarity in question would be propagated, extended, and transmitted; and so a race, distinguished by it, would be produced."—(Op. cit., p. 129.) "It is a justification of this view," adds Dr. Carpenter, "that the mean age of puberty should differ in Bengal, and the Dekhan, to the extent of nearly a year, being twelve years six months in the former province, and thirteen years five months in the latter, notwithstanding its warmer latitude; for although formal marriages take place at a very early age throughout India, the custom is so far modified in the Dekhan, that consummation is not effected until after the first menstruation has appeared."—(Op. cit., vol. iv., p. 1340.)

## D.

Note to Page 155.

Speaking of Sir Isaac Newton, the Marquis de l'Hopital, himself a great contemporary mathematician, asked: "Does he eat, and drink, and sleep like other people? I represent him to myself as a celestial genius, entirely disengaged from matter." Can such a "celestial genius," one may reasonably ask, "be of the same original parentage with the Bushman, who lives in holes and caves, and devours ants' eggs, locusts and snakes?" "Can the Quaiqua or Saboo, whose language is described as consisting of certain snapping, hissing, grunting sounds, all more or less nasal, be of the same descent as those whose eloquent voices 'fulmined over Greece' or shook the Roman Forum?"

It should not surprise us that when we contemplate exclusively the patent diversities of races and overlook the less obvious but more significant evidences of a common nature, we should shrink from the conclusion to which a deeper insight into the facts must yet inevitably conduct us. We have cited in the body of this essay facts which illustrate the argument in favor of the specific identity of diverse races, based upon a rigid analysis of their mental and moral manifestations, and shewing that these may be traced to the powers with which all men are endowed, however imperfectly they may be developed in some of the savage tribes. Another mode of proof consists in demonstrating the possibility of the mutual conversion, within certain limits, of the higher and lower states of humanity. Dr. Carpenter has pointed out a very striking example of the near affinity which may exist between the

most degraded "outcasts of humanity," and races considerably advanced in civilization and intelligence. We refer to "the relationship of the Bushman of the Cape of Good Hope, to the Hottentot population who tenanted that region previously to the arrival of the European colonists." The following is a graphic account given of them by one who has had ample opportunities of observation: "The residence of the Bushman is still amongst inaccessible hills, in the rude cave or cleft of the rock—on the level karroo, in the shallow burrow, scooped out with a stick, and sheltered with a frail mat. He still, with deadly effect, draws his diminutive bow and shoots his poisoned arrows against man and beast. Disdaining labor of any kind, he seizes when he can on the farmer's herds and flocks, recklessly destroys what he cannot devour, wallows for consecutive days with vultures and jackals amidst the carcasses of the slain, and, when fully gorged to the throat, slumbers in lethargic stupor like a wild beast, till, aroused by hunger, he is compelled to wander forth again in quest of prey. When he cannot plunder cattle, he eagerly pursues the denizens of the waste, feasts indifferently on the lion or the hedgehog, and failing such dainty morsels, philosophically contents himself with roots, bulbs, locusts, ants, pieces of hide steeped in water, or, as a last resource, he tightens his 'girdle of famine,' and, as Pringle says—

> "'He lays him down, to sleep away,
> In languid trance, the weary day.'"

"Whether this precarious mode of existence may or may not, have influenced the personal appearance and stature of the Bushman it is difficult to say, but a more wretched-looking set of beings cannot easily be imagined. The average height of the men is considerably under five feet, that of the women little exceed-

ing four. Their shameless state of nearly complete nudity, their brutalized habits of voracity, filth, and cruelty of disposition, appear to place them completely on a level with the brute creation, whilst the 'clicking' tones of a language, composed of the most unpronounceable and discordant noises, more resemble the jabbering of apes than sounds uttered by human beings."*

"Now, there is ample evidence that the Cape Bushmen are a degraded caste of the Hottentot race. They agree with the Hottentots in all the peculiarities of physiognomy, cranial conformation, etc., by which the latter are characterized; and a careful comparison of the languages of the two races has shown that there is an essential affinity between them. It has been ascertained by Dr. Andrew Smith, that many of the Bushman hordes vary their speech designedly, by affecting a singular mode of utterance, (employing the peculiar clapping or clicking of the tongue, which is characteristic of the Hottentot language, so incessantly, that they seem to be giving utterance to a jargon consisting of an uninterrupted succession of claps,) and even adopting new words, in order to make their meaning unintelligible to all but the members of their own community. According to the same authority, nearly all the South African tribes who have made any advances in civilization, are surrounded by more barbarous hordes, whose abodes are in the wilderness and in the fastnesses of mountains and forests, and who constantly recruit their numbers by such fugitives as crime and destitution may have driven from their own more honest and thriving communities. In this manner it has happened that within a comparatively recent period many tribes of Hottentots have been degraded into Bushmen, through the oppressions to which they have been subjected at the hands of their more civil-

* Lieut. Col. E. E. Napier's Excursions in Southern Africa.

ized neighbors. Now, although of the Hottentots themselves we are accustomed to form a very low estimate,—our ideas of them having been chiefly derived from the intercourse of the Cape settlers with the tribes which have been their nearest neighbors, and which have unfortunately undergone that deterioration which is so often found to be the first result of the contact of civilized with comparatively savage nations,—it appears from the accounts of them given by Dutch writers at the time of the first settlement of the Cape, that they were a people considerably advanced in civilization, and possessed of many estimable qualities.

"The testimony of Lieut. Col. Napier is very strong as to their merits as soldiers when officered by Europeans. It has been frequently said that the Hottentots differ from the higher races, in their incapacity to form or to receive religious ideas. This is, however, by no means true. The early Dutch settlers describe them as having a definite religion of their own; and it was their obstinate adhesion to this which was the real obstacle to the introduction of Christianity among them. When the attempt was perseveringly made and rightly directed, the Hottentot nation lent a more willing ear than any other race in a similar condition has done to the preaching of Christianity; and no people has been more strikingly and speedily improved by its reception." (*W. B. Carpenter, Loc. Cit., p.* 1342.)

Dr. PRICHARD also makes similar statements, on the authority of the Dutch voyager Kolben, respecting the intelligence, fidelity and amiability of the Hottentots at the time of the first settlement of the Dutch colony. He further quotes an account of a Hottentot boy, who was bred up by the Governor Vander Stel, in the habits and religion of the Dutch, but who, subsequently, after his return to the Cape, stripped off his European dress, clothed himself in sheep-skin, and emphatically renounced the society of civilized men

and the Christian religion, declaring that he would live and die in the manners and customs of his forefathers. Now this would be taken, by those who are eager to discover fresh proofs of the unchangeableness of human types, as an evidence of a striking moral diversity between this people and the races susceptible of civilization; whereas, as Prichard sagaciously remarks, we really trace here one characteristic trait of nature, as it exists in all the other races. "A sort of instinctive and blind attachment to the earliest impressions made upon the mind is one of our strongest intellectual propensities. In the example above cited, it appears to have been equally powerful in the mind of the Hottentot as it is known to be in more cultivated nations. Yet this has not prevented the spread of Christianity in the same race of people, when introduced among them under different circumstances." (*J. C. Prichard, Physical History of Mankind.*)

## E.

### Note to Page 184.

It thus appears that Prof. Agassiz, in insisting upon the physiological and psychological unity of men while he yet contends for primeval distinctions of physical types, confers upon *subgenera*, as composed of *representative* or closely approximate species, the distinction which has heretofore, by the common consent of naturalists, been assigned to *species*, of being the true units of organic nature. In view of this position, it strikes us as an exhibition of a singular lack of fitness on the part of Prof. Agassiz, when he argues that the doctrine of the specific unity of the human races "runs inevitably into the Lamarckian development theory." Such a charge, as directed against the doctrine in question, seems to us preposterous, and may be made to recoil with irresistible force upon Prof. Agassiz himself. In asserting the specific unity of man, we insist that the tests of such unity are constant and undeviating, but that without touching these characters, there are others which vary within certain restricted limits, and that the varieties thence arising may, under favorable circumstances, acquire the fixedness of species. Now, where in all this is there a leaning to the development theory? On the other hand, if Prof. Agassiz' types of men be primordial, and represent so many distinct species, these must be admitted to be liable to transmutation, since it is quite certain that they run into each other by insensible gradations, and that the actual transition has been known to take

place in several instances. It is *his* doctrine, then, and not ours, which "runs inevitably into the development theory." And so, indeed, is his doctrine accepted by those who have no objection to its logical consequences. M. Paul Broca, rehearsing in Dr. Brown-Sequard's "Journal de Physiologie, for July, 1858," the arguments of "Types of Mankind," rejects the doctrine of fixedness of species. Prof. Agassiz seems to us to be less logical than some of his followers.

# F.

NOTE TO PAGE 298.

HAVING on such slender evidence asserted the fact of the discovery of fossil men, Dr. Usher, as if in allusion to the remarks of Bishop Berkeley, proceeds to affirm that "authentic relics of human art have been, at last, found in the diluvian drift." He refers to the researches of Dr. Daniel Wilson, in Scotland, and those of M. Boucher de Perthes, in France, as proving the existence of Pre-Celtic races, and "a surpassingly ancient people." In answer to this statement, let it suffice to reproduce the comments of a writer in the Westminster Review, no unfriendly critic, but one whose prejudices incline him to adopt the conclusions of Usher, Nott, Gliddon, &c., with reference to the indefinite antiquity of human races. The reviewer says:

"It may be seriously questioned, whether any British barrow, yet opened, can belong to a period beyond two or three thousand years before the Christian era, whilst there are reasons for believing that they mostly fall much within such period. Assuming this view, which we admit is not supported by such positive data as could be desired, to be not very grossly inaccurate, we may well require evidence of the most unexceptionable character, where an antiquity is claimed for human remains, to which that of the Egyptian pyramids is a mere trifle. In the admirable work of Squier and Davis, on the 'ancient monuments of the Mississippi valley,' the subject of the age of these monuments is discussed in a cautious manner, yet the writers are

disposed to claim for them an antiquity considerably greater than that of our British barrows, principally from finding the bones in a less firm condition. Without denying that they may be quite as old as these primeval monuments of our country, or even older, we may observe that the experience of English antiquaries is in favor of not relying with too much confidence on this state of preservation of bones, without taking the conditions of interment into account. At the same time, the bones of ancient Britons are only rarely found in a perfect and firm state; and the hills and downs of this country must present quite as favorable features for the preservation of human remains as the terraces of the river valleys of the United States. The reasoning based on the mound-builders never having selected the lowest of these terraces for their works, whence it has been inferred that this last terrace was formed subsequently to the erection of the mounds, always appeared to us weak and inconclusive."

"Such subjects as these offer a shining field for the work of the imagination; and Dr. Usher, earnest in support of a favorite hypothesis, in quoting freely from the writings of one of our continental neighbors, seems to be quite regardless of national propensities,—otherwise, he would have hesitated before he endorsed with his countenance some of M. Boucher de Perthes' *Celtic hammers and pickaxes, which are neither more nor less than fragments of the antlers of deers, each retaining one of its tines; so as to make them hammers and pickaxes in form alone, just as much as the pewter toys of children are tongs and pokers and frying-pans.*" (Westminster Review, April, 1856.)

We may now observe that the undoubted monuments of early races unknown to history furnish us with many significant indications of their common origin. Our limits preclude extended specifications, but we invite the attention of our readers to an interesting article in the "Protestant Episcopal Quarterly

Review and Church Register," for October, 1858, "on the Monuments of Lost Races." One or two facts only we can cite here.

Among the ornamental carvings on some of the monuments seen by Mr. Stephens, in Central America, he was struck by *the representations of the elephant's trunk.* "And in one place, he discovered, near the base of an obelisk idol, a colossal stone head of a *crocodile.* Neither of these creatures, it will be remembered, belonged, at the age of the discovery, to the American continent." These facts furnish, in our opinion, a conclusive proof of the eastern origin of the builders of the monuments.

In Peru it was found "that the mummied dead were buried in a sitting posture, whether in rock-hewn sepulchral chambers, or in galleries beneath vast mounds of earth or stone." Now, in the Loo Choo Islands, as recently explored by officers of our government, were found "neglected rock-tombs," and the singular old custom of burying the dead in a sitting posture, and that remarkable style of architecture known in Europe as the "Old Cyclopean."

The Cyclopean buildings found in Italy and Greece, and indicating the existence in those countries of antehistorical races have, says Niebuhr, "a great resemblance in style to those of ancient Egypt, especially to the peculiar colossal nature of Egyptian architecture. We, moreover, find in them pointed arches instead of vaults, just as in Egyptian buildings."

In connexion with this subject, we might adduce the monuments and traditions among the most diverse and widely scattered nations relating to the flood. The traditions exist among nearly all the races of the earth, and in many, often very many, and most significant circumstantial details agree with the Scriptural account of the Noachian deluge. Among the monuments which relate to the same catastrophe may be mentioned the Apamæan Medal, struck during the

reign of Philip the Elder, at the town of Apamea, in Phrygia. "This city is known to have been formerly called *Cibotus*, or "the ark," and it is also known that the coins of cities in that age exhibited some leading point in their mythological history." "It was," says Bryant, "undoubtedly named Cibotus, in memory of the ark, and of the history with which it is connected. And in proof of this, we shall find that the people had preserved more particular and authentic traditions concerning the flood, and the preservation of mankind through Noah, than are to be met with elsewhere. * * * * * Upon the reverse (of the coin) is delineated a kind of square machine floating upon the water. Through an opening in it are seen two persons, a man and a woman, as low as to the breast; and upon the head of the woman is a veil. Over this ark is a kind of triangular pediment, upon which sits *a dove;* and below it another, which seems to flutter its wings, and holds in its mouth a small branch of a tree. Before the machine is a man following a woman, who by their attitude seem to have just quitted it and to have got upon dry land. Upon the ark itself, underneath the persons there inclosed, is to be read, in distinct characters, ΝΩΕ," being the very word for Noah used in the Greek tongue. (*Analysis of Ancient Mythology*, by Jacob Bryant Esq., vol. III., p. 47. See also Kitto's Daily Bible Illustrations. New York: R. Carter & Brothers, 1854,—volume on the Antediluvians and Patriarchs, for various monuments and traditions of the flood.)

Now with regard to traditions relating directly to the question of the affiliations of races, we find certain significant and interesting statements in a paper read before the Ethnological section of the British Scientific Association, at Dublin, in August, 1857, by Rear-Admiral FITZROY. This experienced traveller says: "In the West of America, the natives look to the west as the place from which they came, and bury

their dead towards the west (placing them 'towards the spirits of their ancestors,' as they say): while the natives of the east coast of Patagonia point to the eastward as the quarter whence they came, and then bury their dead on the highest hills to the eastward for a similar reason. It is remarkable that none of them derived their origin from their present localities in America. In Africa, the natives point to the north as the place of their origin. And, briefly, all aboriginal tribes have been found by travellers and the learned, to derive their origin more or less directly from the central regions of Asia," p. 131.

traditional

## G.

(Reprinted from the "Prot. Episcopal Review and Church Reg.," for October, 1857.)

*Indigenous Races of the Earth; or, New Chapters of Ethnological Inquiry; including Monographs on Special Departments of Philology, Iconography, Cranioscopy, Palæontology, Pathology, Archæology, Comparative Geography, and Natural History:* contributed by ALFRED MAURY, Bibliothécaire de l'Institut de France, etc., etc., FRANCIS PULSKY, Fellow of the Hungarian Academy, etc., etc., and J. AITKEN MEIGS, M. D., Librarian of the Academy of Natural Sciences of Philadelphia, etc., etc., (with communications from Prof. Jos. LEIDY, M. D., and Prof. L. AGASSIZ, LL. D.) Presenting fresh Investigations, Documents, and Materials, by J. C. NOTT, M. D., and GEO. R. GLIDDON, Authors of "Types of Mankind." Philadelphia: J. B. Lippincott & Co. London: Trübner & Co. 1857.

UNDER the above title, covering, as our readers will perceive, an imposing array of the names of several distinguished collaborators, a new work has been put forth by the authors of the "TYPES OF MANKIND," wherein a second and more flagrant attempt is made to propagate their infidel opinions respecting the claims of the Bible to be received as the inspired Word of God. Under the cover of a pretended discussion of certain ethnological problems, occasion is taken to heap obloquy and contempt upon the sacred Scriptures, and all who hold these in reverence. Such, at least, is the staple of that large portion of the work which appears under the name of Gliddon, as we shall demonstrate by means of a few specimens selected almost at ran-

dom. It gives us much pleasure to add, that the paper of Dr. Nott on Acclimation (his only contribution to the work) is unobjectionable in its tone and spirit, though, in our opinion, its conclusions are far from being sustained by the facts on which they are based.

Having so recently taken a survey of the entire ground of the discussion between the respective advocates of the unity and the diversity of the human races, we shall confine ourselves on the present occasion to such topics as are immediately suggested by the statements of the work whose title heads this article.

One or two general remarks may be premised before we enter upon the task of special and detailed criticism. We observe, then, in the first place, that while the attempt is obviously made throughout the work to justify the promise of its imposing title, the careful and sagacious reader of these "New Chapters," will fail to recognize a single new argument, or to find any new support to the arguments advanced in the "Types of Mankind" in favor of the diversity doctrine, which arguments, as we have seen, in our notices of the latter work, do not bear the test of critical scrutiny.

Our second preliminary general remark relates to the changed tone of the writers, when referring to the present state of the discussion as between them and the believers in human unity. For, strange as it may sound to the readers of the "Types of Mankind," even Gliddon himself admits that "the *diversity* view is not yet absolutely proven"—that the proofs of *diversity* are chiefly of a negative character—and that "these questions being still *sub judice*, some discovery in science now unforeseen, may hereafter establish *unity* upon a certain basis." Concessions of equal or greater significance are made by other contributors to the work, as will be seen below.

Prof. AGASSIZ, in a letter of three pages, merely reiterates the two principal statements of his "Sketch

of the Natural Provinces of the Animal World," published in the "Types of Mankind." We refer, of course, to his labored attempt to demonstrate a coïncidence between the boundaries of the natural zoological provinces and "the natural range of the distinct types of man," and to his most extraordinary assertion that the linguistic affinities of races are not significant of a community of origin, but are merely the necessary results of a common generic nature; it being, in his opinion, just as natural and spontaneous for different tribes of men, even though of diverse origin, to speak alike as it is for different species of ducks to "quack." Having heretofore noticed and, as we think, fully refuted both these statements, we find in the letter under consideration little else that demands special remark. An attempt is made to create a presumption in favor of the specific diversity of the different types of man by adverting to the parallel case of the orang outangs of Borneo, Java, and Sumatra, which, on the authority of Professor RICHARD OWEN and Dr. JEFFREYS WYMAN, are held to belong to at least three distinct species. Prof. Agassiz avers "that the *orangs differ from one another in the same manner as the races of man do;* so much so, that, if these orangs are different species, the different races of men which inhabit the same countries, the Malays and the Negrillos, must be considered also as distinct species." This, at first view, seems a very plausible argument, but it will not bear examination. Its whole strength lies in the quiet assumption implied by the words which we have italicized. But we may be permitted to call for the proof of the assertion that the "orangs differ from one another in the same manner as the races of man do," and especially for the evidence sustaining the converse proposition that they *resemble* one another in the same manner as the races of man do, since the argument is utterly without value unless the proposition be applied in both forms. We will, then, inquire of

the learned Professor whether *these specifically different orangs have ever been known to cross their breed and produce a prolific offspring*, and whether it has ever been shown that there is as close a correspondence between them in respect to physiological and psychological characters as we have made out for all the varieties of man. If, as is doubtless the fact, very little is known on these subjects, we protest against the obvious fallacy of such analogical reasoning as this. After all, too, Professor Owen and Dr. Wyman may be wrong insupposing that these orangs are of different species, as undoubtedly they would themselves be convinced were it possible to prove that the orangs resembled and differed from each other in the same manner as the races of men do. Professor Agassiz himself admits that "they are considered by some of the most eminent zoologists as constituting only one single species;" and that such "is the opinion of ANDREAS WAGNER, who, by universal consent, ranks as one of the highest authorities in questions relating to the natural history of the Mammalia." The truth is, Professor Agassiz violates one of the simplest rules of logic, in attempting to elucidate the specific relations of the human races by referring to the case of the orangs. It is a futile effort to explain the *obscurum per obscurius*. We often, indeed, throw light upon questions relating to the human functions by comparing these with the simpler manifestations of life in lower animals; but where, as in the case under consideration, we know a great deal more about the varieties of man than we do of the anthropoid brutes, so far, at least, as the tests of specific relationships are concerned, it is preposterous to reason from the less known to the better known. We are quite indifferent as to what may be the final decision of naturalists on this question of the specific relations of the orangs. Either they all belong to one single species, as Wagner believes, in which case the argument of Professor Agassiz would refute his

present conclusions, or they belong to more than one species; but if this should be demonstrated, the *proof* would consist, not exclusively or mainly in the slight anatomical differences by which they are marked, but *chiefly in the absence of those evidences of specific unity which have been so abundantly substantiated in the case of the human races.*

In immediate juxtaposition with the letter of Prof. Agassiz appears one from Dr. JOSEPH LEIDY, Professor of Anatomy in the Medical Department of the University of Pennsylvania. This accomplished palæontologist expresses a somewhat hesitating belief in the indefinite antiquity of man, but candidly admits the utter inadequacy of the proof of this doctrine. Thus he says: "While engaged in palæontological researches, I sought for earlier records of the aboriginal races of man than have reached us through vague traditions or through later authentic history, *but without being able to discover any positive evidences of the exact geological period of the advent of man in the fauna of the earth.* The numerous facts which have been brought to our notice touching the discovery of human bones, and rude implements of art, in association with the remains of animals of the earlier pleiocene deposits, are *not conclusive evidence of their contemporaneous existence.*" Again, after expressing the *conjecture* that "primitive races of man may have already inhabited the intertropical regions," at a period coëval with the Glacial epoch of the northern hemisphere, he admits that "*no satisfactory evidence has been adduced in favor of this early appearance of man,*" but adds, that he is "strongly inclined to *suspect* that such evidence will yet be discovered. When such discovery shall have been made, it will be time enough to consider the method of reconciling the fact with the teachings of the Scriptures. At present, we claim the benefit of Dr. Leidy's admission that no such evidence has yet been discovered.

We are pleased to have it in our power to state in this connection that Dr. Leidy agrees with Sir Charles Lyell, as to the recent age of the human hip-bone found near Natchez, in association with the remains of the Mastodon, Mylodon, Megalonyx, Ereptodon, and other extinct species. He does not, indeed, positively deny that it was contemporaneous with the remains of the extinct animals, but he regards the supposition of Sir Charles Lyell, with respect to its subsequent introduction among the latter, to be highly probable, and proves conclusively "that bones of recent animals, when introduced into the older deposits, may, in many cases, very soon assume the condition of the fossils belonging to those deposits. Thus fossilization, petrifaction, or lapidification, is no positive indication of the relative age of organic remains. The miocene vertebrate remains of the Himalayas are far more completely fossilized than the like remains of the eocene deposits of the Paris basin; and the remains of the tertiary vertebrata of Nebraska are more fossilized than those of the secondary deposits beneath."

The letters which have just engaged our attention appear in the Preface of the work. The first Chapter consists of an Essay "On the Distribution and Classification of Tongues"—their relation to the Geographical Distribution of Races; and on the inductions which may be drawn from these relations, by ALFRED MAURY, Librarian of the French Imperial Institute, Secretary-General of the Société de Géographie de Paris." This is an interesting, and, in many respects, an instructive paper. We might admit the general accuracy of the facts brought together by the author without being led to his conclusions. On the contrary, we should derive from those facts views that differ in some respects very materially from those which he has announced.

M. Maury, without attempting to demonstrate the plural origin of mankind, assumes such origin as a postulate, and then aims to show that languages are

susceptible of the same classification as the races—that allied tongues belong to allied races—that the alliance of races adequate to explain affinity of tongues needs not to be that of blood nor even that which has resulted from long intercourse, but is merely that of a common grade of intellectual development. In other words, he sustains the untenable hypothesis of Prof. Agassiz, to which allusion has just been made, and which we have seen has been sufficiently refuted by the convincing reasoning of the Chevalier Bunsen. Speaking of the Basque or Iberian tongue, he indicates a characteristic which serves to connect it with the Tartar tongues of Central Asia. Thus, he says: "It (the Basque tongue) composes 'de toutes piéces,' the *idea-word;* suppresses often entire syllables; and, in this work of composition, preserving sometimes but a single letter of the primitive word, it presents those adjunctive particles that by philologists are termed postpositions—as opposed to prepositions—which serve to distinguish cases." In this manner it is that the Basque constructs its declension. This new characteristic reappears in another great family of languages which we shall discuss anon, namely, the Tartar tongues belonging to Central Asia. "*The Basque consequently denotes a very primitive intellectual state* of the people who occupied Western Europe previously to the arrival of the Indo-Europeans; and, were it allowable to draw an induction from an isolated characteristic, one might suppose that the Iberes were, as a race, allied to the Tartar. But this hypothesis, daring as it is, receives a new degree of probability from the study of the second group of the European languages, foreign to the Indo-Germanic source,—namely, the Finnish group. This group is not restricted to a few idioms on the north-east of Europe. It extends itself over all the territory of northern Russia, even to the extremity of Kamtschatka. Comparison of the numerous idioms spoken by tribes spread over Siberia has revealed a common bond be-

tween them, as well of grammar as of vocabulary. These tongues, which might be comprehended under the general appellation *Finno-Japonic* (from the names of those occupying upon the map the two extremes of their chain) offer this same characteristic of agglutination which has just been signalized in the Basque, but in a much less degree. They make use of that curious system of postpositions which appertains also to the ancient idiom of the Iberes. Those terminations destined to represent cases are replaced by prepositions distinct from the word, which in our languages precede, on the contrary, the words of which they modify the case. It must be noted that the apparition of these postpositions invariably antecedes, in the gradual formation of tongues, the employment of cases; whereas prepositions replace these when the tongue becomes altered and simplified. Cases are nothing, indeed, but the result of the coupling of the postposition to words. The organic march of the declension presents itself, therefore, throughout the evolution of languages, in the following manner,—namely, at first the root (or radical) ordinarily monosyllabic; next, the radical followed by postpositions, corresponding to the period of agglutination; again, the radical submitted to the flexion —corresponding to the ancient period of our Indo-European tongues; and finally, the preposition followed by the radical, corresponding to the modern period of these same languages. It is to be noted that the postposition (in relative age) never returns subsequently to the preposition—any more than can the milk-teeth grow again in an old man after the loss of his molars. Thus, then, the age of the Finnish tongues and of the Basque is fixed. They were idioms of analogous organization, and of which the arrest of development announces a sufficiently feeble degree of intellectual power. The brethren of the Aryas and Iranians, upon penetrating into Europe, had only, therefore, to combat populations living in a state anal-

ogous to that in which we find the hordes of Siberia." We present this passage as setting fourth in a very striking manner the peculiar views of M. Maury. It will be observed that he holds the Iberes, as a race, to be allied to the Tartar tribes, and this too on the ground of linguistic affinities. But by such admitted alliance he does not intend to imply consanguinity, or the relationship of descent from a common stock; he only refers to the affinity of a common intellectual state. He recognizes, as other philologists do, two degrees of relationship among languages,—namely, "the relationship of words coupled with a conformity of the general grammatical system; and this conformity without similitude of vocabulary." When languages offer the former degree of relationship, he terms them *daughters* or *sisters*, implying that they have sprung from a common stock; but when they are connected only through the second kind of relationship, he terms them *allied*, by which he implies nothing more than a similar mental organization in the tribes which speak them. The European languages of the Indo-Germanic stock furnish a striking instance of the former kind of relationship. On this point M. Maury speaks as decidedly as Prichard, Bunsen, or Max Müller would speak. "This distribution of languages in Europe," says he, "co-relative in their affinity with the antique idioms once spoken from the shores of the Caspian Sea to the banks of the Ganges, *is an incontestable index to the Asiatic* ORIGIN *of the peoples who speak them. One cannot here suppose a fortuitous circumstance. It is clearly seen that these tribes issuing from Asia had impinged one against another; and the Celts, as the most ancient immigrants on the European continent, have ended by becoming its most occidental inhabitants.*"

In view of such unexceptionable reasoning as this, we must largely qualify the averment we have made that M. Maury sustains the singularly extreme views of Prof. Agassiz on the explanation of linguistic

affinities. For he thus distinctly admits that a similitude of vocabulary, coupled with grammatical conformity, is adequate to demonstrate community of origin. He, however, agrees with Prof. Agassiz in assuming that no amount of conformity in grammatical construction does of itself establish the fact of a common origin of the tongues in which such conformity is found without similar words. On this point he is directly at issue with the great body of comparative philologists, nearly all of whom hold that the evidence furnished by this kind of conformity is often of more value in proving the common origin of languages, than that supplied by the discovery of similar words. For the vocabularies are, for various and obvious reasons, far more liable to change than the system of grammatical construction, which, to a certain extent, does, indeed, depend upon the degree of intellectual development and the modes of thought of a people, but by no means to such an extent as is asserted in the gratuitous hypothesis of M. Maury. Similar modes of thought and an equal degree of intellectual development do not necessarily or naturally give rise to uniformity of grammatical construction among nations of different origin. Grammatical construction is by far too arbitrary to permit us to adopt such an hypothesis. Moreover, this theory is sufficiently refuted by the fact that nations far advanced in knowledge and civilization have yet retained almost unchanged their earliest form of grammatical construction, which thus ceases to be a true exponent of their intellectual state. Thus "the Chinese, for instance, of all known languages, most completely preserves, in a fixed or stereotyped condition, that earliest phase in the development of speech, in which every word corresponded to or represented a substantial object in the outer world; and it cannot be denied that a considerable amount of intellectual development is to be found amidst that people. And from what is

known of the ancient Egyptian language, this appears to have been nearly in the same condition. On the other hand, there are many languages of comparatively barbarous nations, even belonging to the same group with the Chinese, which possess much greater flexibility."* Now such facts are plainly incompatible with M. Maury's theory, according to which it is held, not only "that speech is with man as spontaneous as locomotion," but also that a similarity of intellectual development always produces a similarity of grammatical construction in the languages of races of diverse origin, and that primitive tongues change their grammatical construction in advancing to higher phases of development in correspondence with the intellectual improvement of the peoples by whom they are spoken. This theory at first view seems plausible, and is recommended by a certain simplicity, but we must take care not to mistake an artificial simplicity, which ignores much that ought to be explained, for the true simplicity of nature, which includes in one harmonious system all the diversified phenomena pertaining to the subject to be elucidated. It may be a very *simple* thing, in, perhaps, more than one sense of the word, to assume that the linguistic affinities of certain races depend solely on their similarity as to intellectual organization, but it is certain that such a theory can never truly satisfy a reflecting mind, and utterly fails to explain the *diversities*, whether of kind or degree, which are observed among the languages of these same races.

If, then, it were really true, as is alleged by M. Maury, that the linguistic families coïncide (with tolerable exactitude) with the more trenched divisions of mankind, and that the relationship between the allied tongues was, in many cases, a mere conformity

* W. B. Carpenter, Cyclopædia of Anatomy and Physiology. Vol. iv., p. 1347.

of grammatical construction without verbal correspondence, it would yet be far more natural to conclude that such conformity, in a matter so conventional as that of the mode of expressing the relations of words in a sentence, must have been the result of a common origin, than that two or more tribes of distinct origin should have spontaneously fallen into the same mode. But in point of fact, the conclusions of comparative philologists in respect to the descent of different races of men from a common stock are seldom based upon grammatical conformity alone, being almost always founded on the double conformity of grammatical construction and verbal correspondence. It is true that they often succeed in establishing community of origin in respect to races whose languages have few or no words in common, but then they do this by demonstrating the affinity of each with some third race by means of verbal correspondences such as suffice to prove a common descent. What this proof is, we have heretofore indicated by quotations from the writings of Prichard and Bunsen. Inasmuch, however, as the point is yet contested by Prof. Agassiz and the editors of the work we are noticing, we are induced to lay before our readers a very interesting and popular exposition by Dr. Latham of the views generally accepted by comparative philologists on this subject.

"The value of language," remarks this competent judge, "has been overrated—chiefly, of course, by the philologists. And it has been undervalued. The anatomists and archæologists, and above all, the zoologists, have done this. The historian, too, has not known exactly how to appreciate it, when its phenomena come in collision with the direct testimony of authorities—the chief instrument in his own line of criticism. It is overrated when we make the affinities of speech between two populations *absolute* evidence of connection in the way of relationship. It is overrated when we talk of *tongues being immutable*, and of

*languages never dying.* On the other hand, it is unduly disparaged when an inch or two of difference of stature, a difference in the taste for fine arts, a modification in the religious belief, or a disproportion in the influence upon the affairs of the world, is set up as a mark of distinction between two tribes speaking one and the same tongue, and alike in other matters. Now, errors of each kind are common. The permanence of language as a sign of origin must be determined, like everything else of the same kind, by induction; and this tells us that both the loss and retention of a native tongue are illustrated by remarkable examples. It tells both ways. In St. Domingo we have Negroes speaking French; and this is a notable instance of the adoption of a foreign tongue. But the circumstances were peculiar. *One* tongue was not changed for another; since no Negro language predominated. The real fact was a *mixture of languages* —and this is next to no language at all. Hence, when French became the language of the Haytians, the usual obstacle of a previously existing common native tongue, pertinaciously and patriotically retained, was wanting. It superseded an indefinite and conflicting mass of Negro dialects, rather than any particular Negro language. . . . . Lastly—for I am illustrating, not exhausting, the subject—there died, in the year 1770, at Karczag, in Hungary, an old man named Varro; the last man, in Europe, that knew even a few words of the language of his nation. Yet this nation was and is a great one; no less a one than that of the ancient Komanian Turks, some of whom invaded Europe in the eleventh century, penetrated as far as Hungary, settled there as conquerors, and retained their language till the death of this same Varro. The rest of the nation remained in Asia; and the present occupants of the parts between the Caspian and the Aral are their descendants. Languages, then, may be lost; and one may be superseded by another. . . . .

On the other hand, the pertinacity with which language resists the attempts to supersede it, is of no common kind. Without going to Siberia or America, the great *habitats* of the broken and fragmentary families, we may find instances much nearer home. In the Isle of Man the native Manks still remains; though dominant Norsemen and dominant Anglo-Saxons have brought their great absorbent languages in collision with it. In Malta, the laborers speak Arabic—with Italian, with English, and with a Lingua Franca around them. In the western extremities of the Pyrenees, a language neither French nor Spanish is spoken, and has been spoken for centuries—possibly millenniums. It was once the speech of the southern half of France, and of all Spain. This is the Basque of Biscay."

"A reasonable philologist makes similarity of language strong—very strong—*primâ facie* evidence in favor of community of descent. When does it imply this, and when does it merely denote commercial or social intercourse? We can measure the phenomena of languages, and exhibit the results numerically. Thus, the *per centage* of words common to two languages may be 1, 2, 3, 4—98, 99, or any intermediate number. But now comes the application of a maxim: *Ponderanda non numeranda.* We ask what *sort* of words coincide, as well as *how many?* When the names of such objects as *fire*, *water*, *sun*, *moon*, *star*, *hand*, *tooth*, *tongue*, *foot*, etc., agree, we draw an inference very different from the one which arises out of the presence of such words as *ennui*, *fashion*, *quadrille*, *violin*, etc. Common sense distinguishes the words which are likely to be borrowed from one language into another, from those which were originally common to the two.

There is a certain amount of French words in English,—that is, of words borrowed from the French. I do not know the percentage, nor yet the time requir-

ed for their introduction; and as I am illustrating the subject rather than seeking specific results, this is unimportant. Prolong the time, and multiply the words; remembering that the former can be done indefinitely. Or, instead of doing this, increase the points of contact between the languages. What follows? We soon begin to think of a familiar set of illustrations; some classical and some vulgar: of the Delphic ship, so often mended as to retain but an equivocal identity; of the Highlander's knife, with its two new blades and three new handles; of Sir John Cutler's silk stockings, degenerated into worsted by darnings. We are brought to the edge of a new question. We must tread slowly, accordingly. In the English words call-*est*, call-*eth* (call-*s*,) and call-*ed*, we have two parts; the first being the root itself, the second a sign of *person*, or *tense*. The same is the case with the word father-*s*, son-*s*, etc.; except that the *-s* denotes *case;* and that it is attached to a substantive instead of a verb. Again, in wis-*er* we have the sign of a comparative; in wis-*est*, that of a superlative degree. All these are *inflexions*. If we choose we may call them *inflexional* elements; and it is convenient to do so, since we can analyze words and contrast the different parts of them: for example, in *call-s*, the *call* is radical, the *-s* inflexional. Having become familiarized with this distinction, we may now take a word of French or German origin—say *fashion* or *waltz*. Each, of course, is foreign. Nevertheless, when introduced into English, it takes an English inflexion. Hence we say, *if I dress absurdly it is fashion-s fault;* also, *I am waltz*-ing, *I waltz*-ed, *he waltz*-es, and so on. In these particular words, then, the inflexional part has been English, even when the radical was foreign. This is no isolated fact. On the contrary, it is sufficiently common to be generalized, so that the *grammatical* part of language has been accredited with a permanence which has been denied to the *glossarial* or *vocabular*. The one chan-

ges, the other is constant; the one is immortal, the other fleeting; the one form, the other matter. Now it is imaginable that the glossarial and grammatical tests may be at variance. They would be so if all our English verbs came to be French, yet still retained their English inflexions in *-ed*, *-s*, *-ing*, etc. They would be so if all the verbs were like *fashion*, and all the substantives like *quadrille*. This is an extreme case; still, it illustrates the question. Certain Hindu languages are said to have nine tenths of the vocables common with a language called the Sanskrit, but none of their inflections; the latter being chiefly Tamul. What, then, is the language itself? This is a question which divides philologists. It illustrates, however, the difference between the two tests—the *grammatical* and the *glossarial*. Of these, it is safe to say that the former is the more constant. Yet the philological method of investigation requires caution. Over and above the terms which one language borrows from another, and which denote intercourse rather than affinity, there are two other classes of little or no ethnological value. 1. *Coïncidences may be merely accidental.* The likelihood of their being so is a part of the doctrine of chances. The mathematician may investigate this; the philologist merely finds the *data*. Neither has been done satisfactorily, though it was attempted by Dr. T. Young. 2. *Coïncidences may have an* organic *connection.* No one would say that because two nations called the same bird by the name *cuckoo*, the term had been borrowed by either from the other, or by both from a common source. The true reason would be plain enough. Two populations gave a name on imitative principles, and imitated the same object. *Son* and *brother*, *sister* and *daughter*—if these agree, the chances are that a philological affinity is at the bottom of the agreement. But does the same apply to *papa* and *mamma*, identical in English, Carib, and perhaps twenty other languages? No. They merely show that

the infants of different countries begin with the same sounds. Such—and each class is capable of great expansion—are the cases where philology requires caution."*

We have seen that Prichard, Bunsen, and other eminent philologists, who, on data derived from the study of languages, advocate the doctrine of a community of descent for all the human tribes, enjoin a like caution in founding conclusions on mere verbal coïncidences. And yet these eminent philosophers are rudely assailed, not indeed personally, but as members of a class, by Mr. Luke Burke, who avers that "a whole tribe of comparative philologists, with a fatuity almost inconceivable, have coolly withdrawn the science of ethnology from the control of zoology, and settled it to their own infinite satisfaction, *as per catalogue* of barbarian vocabularies." Mr. Gliddon, with characteristic complacency, indorses the charge, and applies it personally to Dr. Latham, whom he flippantly terms "an inexhaustible, learned, and laborious ethnological 'catalogue-maker.'" He seemingly forgets that even M. Maury, in favor of whose speculations, as an attempt to support the diversity doctrine, Mr. Gliddon is willing for the nonce to lay aside his usual expressions of contempt for comparative philology and its professors, fully admits the significance of "a similitude of vocabulary" in establishing a common origin for different tongues. How much more rational is the system thus impotently assailed, than the gratuitous theory which asserts that it is just as natural for races of men presenting similar typical characters to use spontaneously similar modes of speech without borrowing from a common source, as it is for all species of thrush "to sing thrush*ish*," as is alleged by Prof. Agassiz. Dr. Carpenter, indeed, men-

* R. G. LATHAM. Man and his Migrations. New York. 1852. Pp. 87–94.

tions a fact which is utterly irreconcilable with this theory:

"It is not a little curious," he remarks, "that the linguistic affinity should often be strongest where the conformity in physical characters is slightest, and weakest where *this* is strongest. Thus, among the Malayo-Polynesian and the American Races, as already remarked, there are very striking differences in conformation, features, complexion, etc.; and yet the linguistic affinity of the great mass of tribes forming each group is not now doubted by any philologist, though a doubt may still hang over some particular cases. On the other hand, the hiatus between the Turanian and the Seriform languages is very wide; but the physical conformity is so strong between the Chinese and the typical Mongolian nations, that no ethnologist has ever thought of assigning to them a distinct origin. So, again, there would seem to be no near relationship between the American and the Turanian languages; but the affinity of the two stocks appears to be established by the transition link afforded by the Esquimaux, which are Mongolian in their conformation and American in their language."*

We do not overlook the fact that the comparison here made has reference to conformity or the want of it, in respect to "physical characters," whereas according to the special theory of M. Maury, the comparison is made with reference to equality of "intellectual state;" but inasmuch as our opponents are adherents of that school of "positive" philosophy, which holds that the *physique* determines the *morale*, to such an extent that even linguistic affinities are to be explained on the ground of special resemblances "in the internal structure of the throat," they, of course, are estopped from raising any objection on that score to the significance of the fact noticed by Dr. Carpenter.

* W. B. Carpenter. Op. Cit., p. 1347.

We have risen from the perusal of M. Maury's instructive paper with a strengthened conviction of the value of the evidence derived from comparative philology, in establishing a community of descent for the most diverse types of mankind. He has himself presented most pregnant examples of such evidence, though, in blind adherence to a foregone conclusion, he refuses to perceive their real bearing.

Chapter II. is entitled, "*Iconographic Researches on Human Races and their Arts*," by FRANCIS PULSZKY, late Under Secretary of State in Hungary. In this paper the author attempts to establish the following facts:

"I. That whilst some races are altogether unfit for imitative art, others are by nature artistical in different degrees.

"II. That the art of those nations which excelled in painting and sculpture, was often indigenous and always national; losing not only its type, but likewise its excellence, by imitating the art of other nations.

"III. That imitative art, derived from intercourse with, or conquest by, artistic races, remained barren, and never attained any degree of eminence; that it never survived the external relations to which it owed its origin, and died out as soon as intercourse ceased, or when the artistic conquerors became amalgamated with the unartistic conquered race.

"IV. That painting and sculpture are always the result of a peculiar artistical endowment of certain races, which cannot be imparted by instruction to unartistical nations. This fitness or aptitude for art seems to be altogether independent of the mental culture and civilization of a people; and no civil or religious prohibitions can destroy the natural impulse of an artistical race to express its feelings in pictures, statuary, and reliefs."

We are by no means satisfied that the author has succeeded in "establishing" his conclusions, but we

do not care to argue this point, and are willing, for the sake of argument, but only for that reason, to concede his several positions. We yet hold that they lend no countenance to the doctrine of the plural origin or specific diversity of men. The case would be perfectly parallel to that of the permanency of any other characteristic, whether physical or moral, of well-established varieties. It has been shown that peculiarities, whether of bodily conformation or of physical temperament, may be transmitted to offspring, even though they had been *acquired* by the progenitors. Not knowing the origin of the principal varieties of the human species, we cannot, of course, account for their diversities in respect to artistical capacity, any more than we can account for differences of stature, conformation of skull, color of skin, etc., each and all of which we have found to be invalid as tests of specific diversity. This conclusion is further strengthened by the consideration, that precisely parallel phenomena are observed among individuals and families belonging to the same race.

The next paper (Chapter III.) is a sketch of the "*Cranial Characteristics of the Races of Men*," by Dr. J. A. MEIGS, Professor of the Institutes of Medicine in the Philadelphia College of Medicine. This paper embodies a notice of the additions and changes which the collection of human crania made by the late Dr. Samuel Morton, and now owned by the Academy of Natural Sciences at Philadelphia, has undergone since the decease of its founder. We have attempted to show that Dr. Morton failed most egregiously to establish the doctrine of diverse human species. That the "additions" made to his collection of crania have not materially strengthened the case, is virtually admitted by Dr. Meigs, as will appear from the following passage of his prefatory letter addressed to Messrs. Nott and Gliddon. "In the treatment of my subject, you will observe that I have confined myself chiefly to a

simple statement of facts, carefully and designedly abstaining from the expression of any opinion upon the *prematurely, and perhaps, in the present state of our knowledge, unwisely mooted questions of the origin, and primitive affiliations of man.* Not a little study and reflection incline me to the belief that long years of severe and earnest research are yet necessary before we can pronounce authoritatively upon these ultimate and perplexing problems of ethnology." Again, he admits "that diversity of cranial types does not *necessarily* imply diversity of origin. Neither do strong resemblances between such types infallibly indicate a common parentage." These admissions are all that we care for.

In Chapter IV., Dr. NOTT treats of "*Acclimation; or the comparative influence of climate, endemic and epidemic diseases on the races of man.*" With respect to this paper, which in the main is suggestive and highly interesting, we have to reïterate the two general remarks which have been already applied to the preceding chapters. First, the writer assumes the specific diversity of the human races, and, under the bias of this assumption, investigates the comparative influence of climate, etc., on these different races. As might be expected under these circumstances, he is ready to accept on slender and disputed evidence any fact which seems to harmonize with his preconceived opinions. Thus, for example, he asserts in one place that "negroes are comparatively exempt from all the endemic diseases of the South," in order to make it appear that such exemption is a specific characteristic of the race; for he further contends that the exemption could not have been acquired by acclimation, as there is no acclimation against malarious diseases. He frequently refers to this as an incontestable fact, though in a note he candidly admits that the correctness of the statement is questioned by persons of large experience. "A medical friend (Dr. GORDON) who has had much

experience in the diseases of the interior of Alabama, South Carolina, and Louisiana, has been so kind," he says, "as to look over these sheets for me, and assures me that I have used language much too strong with regard to the exemption of negroes. He says they are quite as liable as the whites, according to his observations, to intermittents and dysentery." The other general remark, which the perusal of this paper suggests, is the one we have now so often repeated respecting the law of the transmission of the peculiar characteristics of "varieties." If the races of men differed from one another in respect to acclimation and the susceptibility to certain kinds of disease, to a much greater extent than can be proved, or than is even alleged by the most extreme advocate of the theory of human diversity, the fact would by no means disprove the common origin of these races, but would be entirely explicable in consistency with the laws which determine the perpetuation of certain acquired peculiarities. In other words, the susceptibility of a race to one class of diseases, and their exemption from another class, might be a part of the characters distinguishing it as a *variety* from other races within the limits of a single species. That no *specific* distinction between the races can be founded on this alleged difference of susceptibility to disease, is apparent from the fact that the phenomenon lacks the invariable constancy which is necessary to render it valid as a test of species. While most Negroes, for example, are exempt from liability to yellow fever, many full-blooded Africans do take the disease and die of it. Moreover, the comparative immunity of the race finds a parallel in the phenomena often observed among individuals, and even whole families, belonging to the white races. While, then, we recognize in the paper under consideration many interesting and important facts, we contend that few of them have any bearing upon the question of the single or plural origin of man, and that not one is inconsistent with the idea of unity of species and origin.

The two remaining chapters are by Mr. Gliddon, and, like his contributions to "Types of Mankind," are characterized by a great show of bibliographical knowledge, with a vast amount of irrelevant anecdote. The first of these chapters (Chapter V.) has the following pedantic title: "The MONOGENISTS and the POLYGENISTS; being an exposition of the doctrines of schools professing to sustain dogmatically the UNITY or DIVERSITY OF HUMAN RACES; with an inquiry into the antiquity of mankind upon earth, viewed chronologically, historically, and palæontologically." This paper opens with an introductory citation of a passage from the French translation of Humboldt's "Cosmos," which passage he alleges, is entirely omitted in Sabine's translation, and is inaccurately rendered in that of Otté. The passage in question embraces one cited by the illustrious author from an unpublished work, by his brother, William Humboldt, on the "Diversity of Languages and Peoples," which is interpreted by Mr. Gliddon as the expression of a "mature opinion" on the part of these eminent savans, adverse to the doctrine of the single origin of mankind. We do not concede the accuracy of this interpretation of a fragmentary passage from an unpublished work. In order to make our own exegesis intelligible, it is necessary to give the entire passage, and inasmuch as Mr. Gliddon denies the accuracy of Otté's rendering, we will cite his own version of M. Guigniaut's French translation of the "Cosmos," and give also his flippant comments, interspersed through the text, and distinguished by being inclosed in brackets:

"Geographical researches on the primordial seat, or, as it is said, upon the cradle of the human species, possess in fact a character purely mythic. 'We do not know,' says Wm. Humboldt, in a work as yet inedited, upon the diversity of languages and of peoples, "we do not know, either historically, or through any (*whatsoever*) certain tradition, a moment when the hu-

man species was not already separated into groups of peoples. [*Hebrew literature, in common with all others, is thus rejected, being equally unhistorical as the rest.*] Whether this state of things has existed from the origin, (*say beginning,*) or whether it was produced later, is what cannot be decided through history. Some isolated legends being reëncountered upon very diverse points of the globe, without apparent communication, stand in contradiction to the first hypothesis, and make the entire human genus descend from a single pair, [*as for example, in the ancient book called 'Genesis.'*] This tradition is so widely spread, that it has sometimes been regarded as an antique remembrance of men. But this circumstance itself would rather prove that there is not therein any real transmission of a fact, any-soever truly historical foundation; and that it is simply the identity of human conception, which everywhere leads mankind to a similar explanation of an identical phenomenon. A great number of myths without historical link (*say connection*) whatever the ones and the others, owe in this manner their resemblance and their origin to the parity of the imaginations or of the reflections of the human mind. That which shows still more in the tradition of which we are treating, the manifest character of fiction, (*Old and New Testament narratives included, of course,*) is, that it claims to explain a phenomenon beyond all human experience, that of the first origin of the human species, in a manner conformable to the experience of our own day; the manner, for instance, in which, at an epoch when the whole human genus counted already thousands of years of existence, a desert island, or a valley isolated amid mountains, may have been peopled. Vainly would thought dive into the meditation of this first origin; man is so closely bound to his species and to time, that one cannot conceive (*such a thing as*) an human being coming into the world without a family already existing, and without a past, (*an-*

*tecedent*, that is, to such man's advent.) This question, therefore, not being resolvable either by a process of reasoning or through that of experience, must it be considered that the primitive state, such as a pretended (*alluding to the Biblical, necessarily*) tradition describes to us, is really historical—or else, that the human species, from its commencement, covered the earth in the form of peoples? This is that which the science of languages cannot decide (*as theologers suppose!*) by itself, as (*in like manner*) it ought not either to seek for a solution elsewhere, in order to draw thence elucidations of those problems which occupy it."

Setting aside for the present Mr. Gliddon's interpolations, we remark that not only no "mature opinion," but absolutely no opinion at all is expressed by the two brothers, on the subject of the origin of mankind, except to affirm that the "phenomenon is beyond all human experience," and therefore "not resolvable either by a process of reasoning or through that of experience." For while comparative philology is adequate to trace the relationship of languages, and thus to trace all languages to one primeval stock, or at least, when considered in connection with other criteria of the alliance of races, to demonstrate a community of origin for all, it does not "by ITSELF decide" that the entire human genus have descended from "a single pair," inasmuch as a primeval tongue might have been communicated to any number of individuals as well as to two.

Now, as to Mr. Gliddon's interpolations, it is surely a suspicious sign that he is not satisfied to let the Humboldts speak for themselves, without his gratuitous explanations. If they really intended to characterize the Holy Scriptures as "*myths, fiction, and pretended tradition*," this would not be the proper occasion for the easy work of refuting such a charge. We should merely refer our readers to the standard works on the "Evidences of Christianity." But in point of fact,

we have not the least idea that either brother meant to make any allusion to the Scriptures at all. We have seen that many of the most judicious theologians of the past and present ages acquiesce in the expediency of the rule that scientific researches should not be restricted by the supposed meaning of the Scriptures, and ought, therefore, to be pursued irrespectively of any apparent counter statements of the inspired record. Whatever Mr. Gliddon may do, it is certain that neither of the great savans whom he so flagrantly misrepresents, would have gone out of his way to speak contemptuously of the sacred volume. They were discussing a scientific problem, on the pure principles of science.

We have affirmed that they did not, in this discussion, express the opinion ascribed to them by Mr. Gliddon, and have endeavored to justify our affirmation by the language of the very passage cited by him. We now present further and fully confirmatory proof. In this same work, the "Cosmos," Alexander Humboldt says:

"The comparative study of languages shows us that races now separated by vast tracts of land, are allied together, and have migrated from one common primitive seat; it indicates the course and direction of all migrations, and, in tracing the leading epoch of developments, it recognizes, by means of the more or less changed structure of the language, in the permanence of certain forms, or in the more or less advanced distinction of the formative system, *which* race has retained most nearly the language common to all who had migrated from the general seat of origin."

"The largest field for such investigations into the ancient condition of language, and consequently into the period *when the whole family of mankind was in the strict sense of the word, to be regarded as one living whole,* presents itself in the long chain of Indo-Germanic languages, extending from the Ganges to the

Iberian extremity of Europe, and from Sicily to the North Cape."

"From these considerations and the examples by which they have been illustrated, the comparative study of languages appears an important rational means of assistance by which scientific and genuinely philological investigation may lead to a generalization of views regarding the affinity of races, and their conjectural extension in various directions *from one common point of radiation.*"*

Mr. Gliddon is himself constrained to admit that Alexander Humboldt has expressed himself most unequivocally in favor of the specific unity of mankind; but he attempts to weaken the force of the admission by drawing the distinction between unity of species and community of origin. Quoting the following expressions of Humboldt,—namely, "But, in my opinion, more powerful reasons militate in favor of the unity of the human species;" and again: "In sustaining the unity of the human species, we reject, as a necessary consequence, the distressing distinction of superior and inferior races,"—Mr. Gliddon confesses that such "language admits of no equivoque," and adds: "But it is the accuracy of the first assertion, namely, 'the unity of the human SPECIES,' that, without some ventilation of the Baron's precise meaning, I cannot accept."

But further, he incidentally lets fall a remark which proves that he knew William Humboldt as well as his brother to have a most decided leaning towards the doctrine of the radiation of the human races from one original centre. The remark is this: "But even under the supposition that Wilhelm von Humboldt, in his now past generation, when writing on the '*Diversity* of Languages and of Peoples,' may have speculated upon the probability of reducing both into

* Cosmos—Otté's Translation, Vol. II., p. 111. New York.

one original stock, it will remain equally certain, that, in such assumed conclusion, he was biased by no dogmatical respect for MYTHS, FICTION, or PRETENDED TRADITION; and furthermore, that if he grounded his results on the '*Kawi Sprache*,' he inadvertently built upon a quicksand, as subsequent researches have established."

The *animus* of all this is patent. While Mr. Gliddon "cannot accept" certain scientific conclusions of the celebrated brothers, he is generously willing to tolerate such heresies in science, in consideration of the assumed fact that they agree with him in regarding and characterizing the Holy Scriptures as "myths, fiction, and pretended tradition." These eminent savans are entitled to but little consideration in matters of science which have been the study of their lives, if their conclusions are distasteful to Mr. Gliddon; but if they happen to use equivocal expressions which he can torture into a denial of the truth of the Scriptures, which they have never made a special study, they become *pro hac vice* an indisputable authority with that gentleman. "I cannot but congratulate myself," he complacently says, "that—however other great authorities may be found to agree with, or to contradict him, on the question of human monogenism or polygenism—in rejecting 'myths,' 'fiction,' and 'pretended tradition,' I find myself merely and implicitly following in the wake of ALEXANDER VON HUMBOLDT."

We thus see that after making a noisy effort to show that "theologers" had misrepresented the Humboldts in ranking them on the side of monogenism, Mr. Gliddon has himself more than once admitted the very fact, for the assertion of which on the part of others he has raised an outcry of "literary dishonesty."

We shall dismiss the subject of this gentleman's writings, and conclude our notice of the book, by quoting a few passages from one or the other chapter contributed by him, as specimens of his mode of scientific discussion:

"BUNSEN—with whom philology and ethnology are synonyms through which we shall recover, some day, the *one primeval language* spoken by the first pair, who are now accounted '*beatorum in cœlis*'—declares, 'that physiological inquiry, (one, as we all know, completely outside of the range of his high education and various studies,) although it can never arrive by itself at any conclusive result, still decidedly inclines, on the whole, towards the theory of the unity of the human race.'" To which, with very bad taste, to say no more, he appends the following note: "'Multæ terricolis linguæ, cœlestibus una,' is another way of stating such axiom. How did this last writer know that people do talk *one* language in heaven? Can he show us whether the 'dead' have speech at all? During some generations, the Sorbonne, at Paris, discussed, in school-boys' themes, a coherent enigma, namely: *An sancti resurgant cum intestinis*—not a less difficult problem for such youths' pedagogues!"

In another paragraph he says: "Except as orthodox repellers of free investigation, the *unity*-men have really no place in ethnological science, unless with ALEXANDER VON HUMBOLDT they use the term 'unity' in a philosophical (or 'parliamentary') sense, and not in the one currently understood by theologers."

In other words, PRICHARD, LEPSIUS, BUNSEN, MAX MÜLLER, and others, whose intellectual ability and immense erudition even Mr. Gliddon himself fully admits, have yet, according to him, no place in ethnological science, the very specialty to which they have devoted the labors of their lives, since they advocate the doctrine of "unity" in the sense currently understood by theologians.

Our next extracts present another instance of similar inconsistency and contradiction. They refer to the Chevalier Bunsen. Alluding to certain philological inductions which Bunsen considers to have been established by the researches of Dr. Max Müller, Gliddon

denies "*the competency of any man living, in the actual state of science, to be considered a 'philologist' if he enunciate such a doctrine.*" He is not satisfied to question the correctness of this particular induction, but he denies the competency in general terms, of both Bunsen and Müller, in their own special field of study. And yet a few pages further on, he couples the name of Bunsen with that of Lepsius, and characterizes them as "two world-renowned, and by myself, much-honored names," and adds; "I have always felt proud to sit at their feet for instruction, received, as not a slight portion of what little I know has been, oftentimes with mine own feet under their respective mahoganies."

Finally, after all this confident assertion, it appears that Mr. Gliddon has yet some misgivings as to the value of his various proofs of the plural origin of mankind,—for he says:

"For my own part, I have met with no reason to amend or change the position taken in the last course of lectures delivered in New Orleans, as regards my individual opinions on the *unity or diversity* of human origin. It was the following:

"1st. That every argument hitherto brought forward on the *unity* side, is either refuted or refutable; but that,

"2d. Whilst the reasonings in favor of *diversity* preponderate greatly over those against it, I do not, nevertheless, hold the latter to be, as yet, absolutely proven.

"Lest such assertion should appear paradoxical, I would explain, that the proofs of *diversity* are chiefly of a negative character: and on the other hand, these questions being still *sub judice*, some discovery in science, now unforeseen, may hereafter *establish unity upon a certain basis*"!!

We are fully persuaded that this "unity" *is* already established on a perfectly certain basis. From the nature of the problem, it was to be expected that cer-

tain difficulties should be encountered in the attempt to demonstrate the specific unity and common origin of diversified races of men distributed over the whole face of the earth. But when we examine the facts a little closely, even as they are presented to us separately, and as isolated phenomena, we do not find a single one which is inconsistent with the idea of a common origin, while very many are of impossible explanation on any other hypothesis. If now we combine the separate facts and contemplate them in their mutual bearing, any other conclusion becomes utterly irrational and absurd. It is because some men fail to look at the question in this way, that they still refuse to perceive the incontestable proofs of the unity of mankind. This course appears to us as irrational as it would be to doubt the self-supporting powers of an arch because its constituent parts could not separately support themselves in the same position. Even if the difficulties of monogenism were much greater than they are, they would be small indeed compared with the contradictions and absurdities into which the advocates of polygenism necessarily fall.

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